

## COAL MINING AND RECLAMATION PERMIT

Issued To: AMERICAN ENERGY CORP  
43521 Mayhugh Hill Rd.  
Twp Hwy 88  
Beallsville, OH 43716

Telephone: (740) 926-9152

Permit Number: D-425  
Application Number: D-425-15  
Acreage: 0  
Underground Acreage: 165.2  
Effective: 12/23/2010  
Expires: 10/21/2014

Type of Operation: Underground (Room and Pillar), Underground (Longwall)

### CONDITIONS

CONDITION TYPE	DESCRIPTION
Archeology	Prior to repair of ground surface damage from mining related actions, an archaeological clearance from the Division is necessary that also takes into account the identification and review of access route(s) to the damage when necessary.
Archeology	Longwall mining is prohibited until the applicant completes a historic architectural survey report identifying and documenting on the appropriate forms the farmsteads located on the Dillon, Caldwell, Post, Reed, Boughner and Burdette properties and provides National Register eligibility assessments for each. In addition, the applicant will include in the report mitigation measures for all eligible National Register properties within the full coal recovery and shadow area. The report must be completed, reviewed by the Division and Ohio Historic Preservation Office, and cleared prior to the beginning of longwall operations. An ARP adding the mitigation measures to the permit or a Permit Update Letter documenting the lack of eligibility for the National Register must be submitted and approved to remove or modify this condition.
Other	Longwall mining is prohibited within 250 feet of impoundment P-34.01. The permittee may submit a permit update letter with an engineer's statement that the impoundment has been modified to less than 20 acre-feet. Upon approval of the permit update letter, the Division will remove this permit condition.

The issuance of this permit means only that the application to conduct a coal mining operation meets the requirements of Chapter 1513 of the Revised Code, and as such DOES NOT RELIEVE the operator of any obligation to meet other federal, state or local requirements.

This permit is issued in accordance with and subject to the provisions, conditions, and limitations of Chapter 1513 of the Revised Code and Chapters 1501:13-1, 1501:13-3 through 1501:13-14 of the Administrative Code.

The water monitoring plan for this permit shall be:

Quality: See Part 3, D of the Permit Application

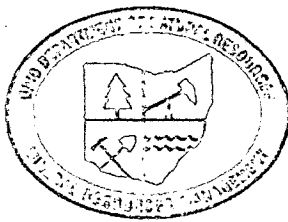
Quantity: See Part 3, D of the Permit Application

Note: These monitoring requirements are separate from NPDES monitoring requirements.

Signature: \_\_\_\_\_

John F. Husted, Chief, Mineral Resources Management

Date: 12/23/2010



## PERMIT SUMMARY SHEET

### Division of Mineral Resources Management

Permit Number: D-425

Application Number: D-425-15

See permit cover sheet for specific conditions and hydrologic monitoring requirements.

#### Inspector's Note:

This summary is designed only to advise you of important provisions of a permit that require your attention and monitoring. Your familiarity with requirements and permitted activities will insure that mining and reclamation occurs as was intended and approved at the time of permit issuance. Please take the time to review relevant provisions of the permit carefully and thoroughly. Should you have questions about this or any permit, please do not hesitate to contact the application manager within the Permitting Section.

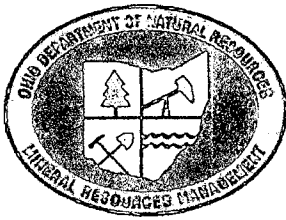
Items marked are applicable to this permit:

- |  |  |
|--|--|
| <input type="checkbox"/> Auger Mining/Highwall Mining                      | <input type="checkbox"/> Beneficial Use of CCB's   |
| <input type="checkbox"/> Alternate Resoiling Material                      | <input type="checkbox"/> Public Road Permit  |
| <input type="checkbox"/> Blasting Plans                                    | <input type="checkbox"/> Small Area Drainage Exemption (SADE)  |
| <input type="checkbox"/> Buffer Zone Variance Request (BZVR)               | <input type="checkbox"/> Steep Slope Mining  |
| <input type="checkbox"/> Coal Waste Disposal                               | <input type="checkbox"/> Slurry Impoundment  |
| <input type="checkbox"/> Delay in Contemporaneous Reclamation              | <input type="checkbox"/> Test Hole Variance  |
| <input type="checkbox"/> Excess Spoil Disposal                             | <input type="checkbox"/> Variance from AOC   |
| <input type="checkbox"/> Experimental Mining Practices                     | <input type="checkbox"/> Wetlands Affectment/Avoidance   |
| <input type="checkbox"/> Federal Lands                                     | <input type="checkbox"/> Within 500' of active UG mine   |
| <input type="checkbox"/> Mountain Top Removal                              | <input checked="" type="checkbox"/> Within 500' of abandoned UG mine   |
| <input type="checkbox"/> MSHA Impoundment                                  | <input type="checkbox"/> Within 100' of a cemetery   |
| <input type="checkbox"/> AML No-Cost Area                                  | <input type="checkbox"/> Within 300' of occupied dwelling  |
| <input type="checkbox"/> Prime Farmlands                                   | <input type="checkbox"/> Within 300' of public building, church, school, community or institutional building or public |
| <input type="checkbox"/> Remining (Reduced Maintenance)                    | <input type="checkbox"/> Within 1000' of wild, scenic or recreational river  |
| <input type="checkbox"/> Remining (Modified effluent)                      | <input type="checkbox"/> OEPA 401/COE 404 permits needed for wetlands or stream affectment and/or reconstruction       |
| <input type="checkbox"/> Remining BMP only Permit                          | <input type="checkbox"/> Tree Planting in Reclamation Plans  |
| <input type="checkbox"/> Special handling of acid-forming/toxic materials. |  |

Application Manager: Jeff Emmons, Environmental Specialist

Date: DEC 23 2011





## APPROVED UNDERGROUND COAL MINING PERMIT APPLICATION

### Applicant:

**Name:** AMERICAN ENERGY CORP

**Address:** 43521 Mayhugh Hill Rd.  
Twp Hwy 88  
Beallsville, OH 43716

**Application Number:** D-425-15

**Number of acres in underground workings:** 165.2

**Number of surface acres to be affected:** 0

**The water monitoring plan for this permit shall be:**

**Quality:** See Part 3, D of the Permit Application

**Quantity:** See Part 3, D of the Permit Application

**Note:** These monitoring requirements are separate from NPDES monitoring requirements.

This application is APPROVED since it demonstrates and the Division has found that the criteria in paragraph (E) of rule 1501: 13-5-01 of the Administrative Code have been met.

**Signature:** \_\_\_\_\_

**Date:** DEC 23 2010

OPERATOR

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

**UNDERGROUND COAL MINING AND RECLAMATION  
PERMIT APPLICATION  
(UNDERGROUND WORKINGS ONLY)**

- A. Applicant's Name **American Energy Corporation**  
B.

Address **43521 Mayhugh Hill Road**

City **Beallsville** State **OH** Zip **43716**

Telephone **(740) 926-9152**

Employer Identification No. (EIN) **See Addendum Part 1, A**, or

Social Security No. (last 4 digits) **XXX-XX-**

- C. Type of Operation (check appropriate space(s)):

☒ Room and Pillar, ☐ Pillar Extraction, ☒ Longwall, ☐ Other

- D. Name of mine **Century Mine**

- E. List below the MSHA identification numbers for the mine and for all mine-associated structures requiring MSHA approval on this application area.

**33-01070, 33-61070**

- F. Indicate the exploration permit number(s) or notice of intent (NOI) number(s) that were obtained for this application area.

**8-CA-017, 8-CA-039, 10-CA-025, 07-CA-25**

- G. Did a person other than an employee of the applicant prepare this application?

Yes ☐ No ☒ If "yes," provide:

Preparer's Name

Address

City

State

Zip

Telephone

H. I, the undersigned, a responsible official of the applicant, do hereby verify the information in the complete permit application as true and correct to the best of my information and belief.

Printed Name James R. Turner, Jr.

Title Treasurer

Signature 

Date 6/30/10

Sworn before me and subscribed in my presence this 30<sup>th</sup> day of June, 2010.

Kathy J. Roe  
Notary Public



KATHY J. ROE  
Notary Public, State of Ohio  
My Commission Exp. Dec. 14, 2014

RECEIVED

JUL 12 2010

DIVISION OF MINERAL RESOURCES  
CAMBRIDGE

ORIGINAL

- I. **FOR REVISION REVIEW ONLY:** This item is to be completed after revisions, if any, have been made to the permit application.

I, the undersigned, a responsible official of the applicant, do hereby verify and acknowledge the revisions made during the permit review process as true and correct to the best of my information and belief.

Printed Name **Greg S. Williams**

Title **Permit Engineer**

Signature

Date

12/21/10

Sworn before me and subscribed in my presence this 21<sup>st</sup> day of December, 2010

*Penny J. Elliott*



PENNY J. ELLIOTT  
Notary Public  
State of Ohio

My Commission Exp. Feb. 11, 2013

## **PART 1: LEGAL, FINANCIAL, COMPLIANCE, AND RELATED INFORMATION**

### **A. IDENTIFICATION OF INTERESTS**

- (1) Is the applicant a single proprietorship? Yes ☐ No ☒ If "yes," provide the following:

Owner's Name

Address

City State Zip Telephone

EIN , or SSN (last 4 digits) XXX-XX-

Beginning date of ownership

If "no," indicate business structure of applicant.

- ☐ Partnership (registration no. and date obtained)  
☒ Corporation (charter no. and date incorporated) **00842695 4-12-1993**  
☐ Association  
☐ Other, specify

Provide the following for the applicant's statutory agent and submit Owners and Controllers

Agent's Name **C T Corporation System**

Address **1300 East 9th St.**

City **Cleveland** State **Ohio** Zip **44114** Telephone **(216) 621-4270**

EIN **See Addendum to Part 1, A**, or SSN (last 4 digits) XXX-XX-

- (2) Will there be a mine operator other than the applicant?

Yes ☐ No ☒ If "yes" provide the operator's name and submit Operator Ownership and Control (Note: if more than one operator, indicate operator's name and submit a separate form for each).

Operator's Name **American Energy Corporation**

- (3) Provide the following for the person or entity who will pay the abandoned mine land reclamation fee for the applicant.

Name **American Energy Corporation**

Address **43521 Mayhugh Hill Road**

City **Beallsville** State **Beallsville** Zip **43716** Telephone **(740) 926-9152**

EIN **See Addendum to Part 1, A**, or SSN (last 4 digits - optional) XXX-XX-

ADDENDUM TO PART , ITEM A  
AMERICAN ENERGY CORPORATION  
CENTURY MINE  
PERMIT D-0425-15

The Social Security Numbers (SSN) and Employer Identification Numbers (EIN) for all individual Owners, Controllers and Corporate entities listed in this application are referenced only in an additional Addendum to Part 1, A. That addendum is held by the respective State Division of Mineral Resource Management personnel in the Permit Review group for the purpose of confidentiality.

NAME	SSN
BOYLE, SCOTT A.	Decline
CORNELIUS, B.J.	5023
FAYNE, HENRY W.	7216
FORRELLI, JOHN R.	2688
HEIDELBACH, ROY A.	5011
HILL, P. BRUCE	6916
LAWSON, RICHARD L.	4413
LOIACONO, MICHAEL D.	6784
MCKOWN, MICHAEL O.	4552
MOORE, ROBERT D.	9703
MURRAY, ROBERT E.	8852
MURRAY, RYAN	0815
MURRAY, JONATHAN	0811
MURRAY, ROBERT EDWARD	1320
PUTSOCK, ROBERT L.	8460
TURNER, JAMES R.	8372
Van BEVER, CHRISTOPHER G.	2161

CORPORATION NAME	EIN
Murray Energy Corp.	31-1956752
Murray Energy Holdings Co.	20-0100463
American Energy Corp.	31-1550443
Fifth Third Bank Of Northeast Ohio Trustee, (Murray 2003 Trust)	34-7161341
C T Corporation System	51-0006522
The American Coal Company	73-1546124
Andalex Resources Inc.	34-1867389
Andalex Resource Management Inc.	61-0731325
Belmont Coal, Inc.	31-1536602
Energy Resources, Inc.	31-1044044
Genwal Resources, Inc.	87-0533099
KenAmerican Resources, Inc.	61-1264385
Land Restoration Inc. (Merged w/ KenAmerican Resources)	NA
Maple Creek Mining Inc.	25-1755305
Mon-Valley Transportation Center, Inc.	15-1490495
OhioAmerican energy, Inc.	20-3044610
The Ohio Valley Coal Company	34-1041610
The Oklahoma Coal Company	34-1673480
TDK Coal Sales	25-1422374
Pennamerican Coal, LP	25-1800870
West Ridge Resources, Inc.	87-0585129
UMCO energy Inc.	52-1615668
UtahAmerican Energy, Inc.	34-1874726
West Virginia Resources, Inc.	55-0713676

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OWNERS AND CONTROLLERS**

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **American Energy Corporation**

Name **James R. Turner**

Street address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1,A**

Title of position within entity **Treasurer**

Date position assumed/ended (if applicable) **03-01-05/**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert Putsock**

Street address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1,A**

Title of position within entity **Assistant Treasurer**

Date position assumed/ended (if applicable) **1-27-04/**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert E Murray**

Street address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1,A**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **12/15/04/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

**Part 1: Section A**



**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OWNERS AND CONTROLLERS**

Applicant's Name **American Energy Corporation**

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Name of business entity **American Energy Corporation**

Name **Robert E. Murray**

Street address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **President**

Date position assumed/ended (if applicable) **12/15/04 / N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Murray Energy Corporation**

Street address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

EIN **See Addendum to Pt 1, A**, or SSN (last 4 digits) xxx-xx-

Title of position within entity **Sole Shareholder**

Date position assumed/ended (if applicable) **2/23/01/**

Percent of ownership **100%** Date of ownership **2/23/01**

Name **Michael O. McKown**

Street address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Secretary**

Date position assumed/ended (if applicable) **11-1-99/**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OWNERS AND CONTROLLERS**

Applicant's Name **American Energy Corporation**

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Name of business entity **Murray Energy Corporation**

Name **Robert D. Moore**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Vice President**

Date position assumed/ended (if applicable) **12/17/04/8/01/08**

Percent of ownership **0** Date of ownership **N/A**

Name **P. Bruce Hill**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Vice President**

Date position assumed/ended (if applicable) **12/18/03/11/05/09**

Percent of ownership **0** Date of ownership **N/A**

Name **Michael O. McKown**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Secretary**

Date position assumed/ended (if applicable) **02/23/01/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OWNERS AND CONTROLLERS**

Applicant's Name **American Energy Corporation**

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Name of business entity **Murray Energy Corporation**

Name **Robert D. Moore**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Executive Vice President**

Date position assumed/ended (if applicable) **8/01/08 /N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert D. Moore**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Chief Financial Officer**

Date position assumed/ended (if applicable) **9/11/07/NA**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert D. Moore**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **4/23/07/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OWNERS AND CONTROLLERS**

Applicant's Name **American Energy Corporation**

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Name of business entity **Murray Energy Corporation**

Name **John R Forrelli**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Vice President**

Date position assumed/ended (if applicable) **9/11/07 /N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert E Murray**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Shareholder**

Date position assumed/ended (if applicable) **02/23/01/10/21/03**

Percent of ownership **100** Date of ownership **2/23/01-10/21/03**

Name **Robert E Murray**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **President**

Date position assumed/ended (if applicable) **02/23/01/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OWNERS AND CONTROLLERS**

Applicant's Name **American Energy Corporation**

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Name of business entity **Murray Energy Corporation**

Name **Michael D Loiacono**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Chief Financial Officer**

Date position assumed/ended (if applicable) **12/20/05 /4/23/07**

Percent of ownership **0** Date of ownership **N/A**

Name **Michael D Loiacono**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **1/28/05/4/23/07**

Percent of ownership **0** Date of ownership **N/A**

Name **Michael D Loiacono**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Treasurer**

Date position assumed/ended (if applicable) **02/23/01/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OWNERS AND CONTROLLERS**

Applicant's Name **American Energy Corporation**

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Name of business entity **Murray Energy Corporation**

Name **John R Forrelli**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Vice President**

Date position assumed/ended (if applicable) **12/18/03 /12/17/04**

Percent of ownership **0** Date of ownership **N/A**

Name **G. Christopher Van Bever**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Assistant Treasurer**

Date position assumed/ended (if applicable) **10/22/07/**

Percent of ownership **0** Date of ownership **N/A**

Name

Street address

City State Zip

EIN , or SSN (last 4 digits) xxx-xx-

Title of position within entity

Date position assumed/ended (if applicable) /

Percent of ownership Date of ownership

Submit and identify additional pages necessary to complete response.

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OWNERS AND CONTROLLERS**

Applicant's Name **American Energy Corporation**

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Name of business entity **Murray Energy Corporation**

Name **Robert Edward Murray**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Vice President**

Date position assumed/ended (if applicable) **09/11/07 /**

Percent of ownership **0** Date of ownership **N/A**

Name **Ryan M. Murray**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Vice President**

Date position assumed/ended (if applicable) **09/11/07 /**

Percent of ownership **0** Date of ownership **N/A**

Name **Roy A. Heidelberg**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Assistant Vice President**

Date position assumed/ended (if applicable) **09/11/07/**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OWNERS AND CONTROLLERS**

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **Murray Energy Corporation**

Name **B.J. Cornelius**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **NA**, or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Vice President-Marketing**

Date position assumed/ended (if applicable) **08/01/08/**

Percent of ownership **0** Date of ownership **N/A**

Name **Michael O. McKown**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN **NA**, or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **General Counsel**

Date position assumed/ended (if applicable) **08/01/08 /**

Percent of ownership **0** Date of ownership **N/A**

Name **Michael O. McKown**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Senior Vice President**

Date position assumed/ended (if applicable) **08/01/08/**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

**Part 1: Section A**



**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OWNERS AND CONTROLLERS**

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **Murray Energy Corporation**

Name **Murray Energy Holdings Co.**

Street address **29325 Chagrin Boulevard, suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **See Addendum to Pt 1, A**, or SSN (last 4 digits) xxx-xx-

Title of position within entity **Shareholder**

Date position assumed/ended (if applicable) **N/A/N/A**

Percent of ownership **100** Date of ownership **10/21/03**

Name **Robert E. Murray**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Chairman of the Board**

Date position assumed/ended (if applicable) **02/23/01/N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert E. Murray**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **2/23/01/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OWNERS AND CONTROLLERS**

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **Murray Energy Corporation**

Name **Richard L. Lawson**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **01/28/05/N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert E Murray**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Chief Executive Officer**

Date position assumed/ended (if applicable) **2/23/01/NA**

Percent of ownership **0** Date of ownership **N/A**

Name **Henry W. Fayne**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **01/28/05/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OWNERS AND CONTROLLERS**

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **Murray Energy Holdings Company**

Name **Robert E. Murray**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN **See Addendum to Pt 1, A**

Title of position within entity **President**

Date position assumed/ended (if applicable) **06/30/03/ 11/29/05**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert E. Murray**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN **See Addendum to Pt 1, A**

Title of position within entity **Chief Executive Officer**

Date position assumed/ended (if applicable) **6/30/03/ 11/29/05**

Percent of ownership **0** Date of ownership **N/A**

Name **Scott A. Boyle**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN **Decline**

Title of position within entity **Chief Executive Officer**

Date position assumed/ended (if applicable) **11/29/05/12/20/05**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OWNERS AND CONTROLLERS**

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **Murray Energy Holdings Company**

Name **Michael D. Loiacono**

Street address **29325 Chargrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN **See Addendum to Pt 1, A**

Title of position within entity **President**

Date position assumed/ended (if applicable) **1/10/05/ 4/23/07**

Percent of ownership **0** Date of ownership **N/A**

Name **Michael D. Loiacono**

Street address **29325 Chargrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN **See Addendum to Pt 1, A**

Title of position within entity **Chief Executive Officer**

Date position assumed/ended (if applicable) **1/10/05/ 4/23/07**

Percent of ownership **0** Date of ownership **N/A**

Name **Scott A. Boyle**

Street address **29325 Chargrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN **20-0100463**, or SSN **Decline**

Title of position within entity **President**

Date position assumed/ended (if applicable) **11/29/05/12/20/05**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OWNERS AND CONTROLLERS**

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **Murray Energy Holdings Company**

Name **Michael D. Loiacono**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN **See Addendum to Pt 1, A**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **6/30/03/ 4/23/07**

Percent of ownership **0** Date of ownership **N/A**

Name **Fifth Third Bank Of Northeast Ohio Trustee, (Murray 2003 Trust)**

Street address **24261 Cedar Rd.**

City **Cleveland** State **OH** Zip **44124**

EIN **See Addendum to Pt 1, A**, or SSN **N/A**

Title of position within entity **Shareholder**

Date position assumed/ended (if applicable) **N/A/**

Percent of ownership **20 - Class B** Date of ownership **10/13/2003**

Name **Robert E. Murray**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN **See Addendum to Pt 1, A**

Title of position within entity **Shareholder**

Date position assumed/ended (if applicable) **6/27/2003/5/10/2010**

Percent of ownership **100 - Class A** Date of ownership **6/27/2003**

Submit and identify additional pages necessary to complete response.

**Part 1: Section A**

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

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Name of business entity **Murray Energy Holdings Company**

Name **Robert E. Murray-Trustee, (REM Family Trust)**

Street address **29325 Chagrln Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN **See Addendum to Pt 1, A**

Title of position within entity **Shareholder**

Date position assumed/ended (if applicable) **5/10/2010/**

Percent of ownership **100 - Class A** Date of ownership **5/10/2010**

Name **Robert E. Murray-Trustee, (REM Family Trust)**

Street address **29325 Chagrln Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN **See Addendum to Pt 1, A**

Title of position within entity **Shareholder**

Date position assumed/ended (if applicable) **5/10/2010/**

Percent of ownership **20 - Class B** Date of ownership **5/10/2010**

Name

Street address

City State Zip

EIN , or SSN

Title of position within entity

Date position assumed/ended (if applicable) /

Percent of ownership Date of ownership

Submit and identify additional pages necessary to complete response.

Part 1: Section A

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OWNERS AND CONTROLLERS**

Applicant's Name **American Energy Corporation**

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Name of business entity **Murray Energy Holdings Company**

Name **Robert D. Moore**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **President**

Date position assumed/ended (if applicable) **04/23/07/N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert E. Murray**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **06/30/03/N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Michael D. Loiacono**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Treasurer**

Date position assumed/ended (if applicable) **1/10/05/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

**Part 1: Section A**

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

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Name of business entity **Murray Energy Holdings Company**

Name **Michael McKown**

Street address **29325 Chargrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Secretary**

Date position assumed/ended (if applicable) **06/30/03/ N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert Edward Murray**

Street address **29325 Chargrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Shareholder**

Date position assumed/ended (if applicable) **06/30/03/N/A**

Percent of ownership **20 - Class B** Date of ownership **06/30/03**

Name **Ryan Michael Murray**

Street address **29325 Chargrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**See Addendum to Pt 1, A**

Title of position within entity **Shareholder**

Date position assumed/ended (if applicable) **06/30/03/N/A**

Percent of ownership **20 - Class B** Date of ownership **06/30/03**

Submit and identify additional pages necessary to complete response.

Part 1: Section A



**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OWNERS AND CONTROLLERS**

Applicant's Name **American Energy Corporation**

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Name of business entity **Murray Energy Holdings Company**

Name **Jonathan Robert Murray**

Street address **29325 Chargrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN **See Addendum to Pt 1, A**

Title of position within entity **Shareholder**

Date position assumed/ended (if applicable) **06/30/03/ N/A**

Percent of ownership **20 - Class B** Date of ownership **06/30/03**

Name **Robert E Murray**

Street address **29325 Chargrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN **See Addendum to Pt 1, A**

Title of position within entity **Shareholder**

Date position assumed/ended (if applicable) **07/09/2003/ 5/10/2010**

Percent of ownership **20 - Class B** Date of ownership **07/09/2003**

Name **Robert D Moore**

Street address **29325 Chargrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN **See Addendum to Pt 1, A**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **4/23/07/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OWNERS AND CONTROLLERS**

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **Murray Energy Holdings Company**

Name **Michael O. McKown**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN **See Addendum to Pt 1, A**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **06/30/03/ N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert E. Murray**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN **See Addendum to Pt 1, A**

Title of position within entity **Chairman of the Board**

Date position assumed/ended (if applicable) **6/30/03/ 11/29/05**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert D. Moore**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN **See Addendum to Pt 1, A**

Title of position within entity **Chief Executive Officer**

Date position assumed/ended (if applicable) **4/23/07/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

**Part 1: Section A**

- (4) Provide the following for all persons having the authority or ability to commit the financial, real property assets, or working resources of the applicant who are not otherwise identified as officers, directors or owners of the applicant. If none, check box: ☒. If any person listed is a business entity and not an individual, also complete Owners and Controllers for that person.

Name

Address

City State Zip Telephone

EIN , or SSN (last 4 digits) XXX-XX-

O & C relationship to entity

Date O & C relationship began/ended (if applicable) /

If necessary, submit additional pages to complete response.

- (5) Provide the following for all persons owning or controlling the coal to be mined by another person under a lease, sublease, or other contract and (a) having the right to receive the coal after mining, or (b) having the authority to determine the manner in which another person conducts coal mining operations. If none, check box: ☒. If any person listed is a business entity and not an individual, also complete Owners and Controllers for that person.

Name

Address

City State Zip Telephone

EIN , or SSN (last 4 digits) XXX-XX-

O & C relationship to entity

Date O & C relationship began/ended (if applicable) /

If necessary, submit additional pages to complete response.

- (6) List below the person or persons primarily responsible for ensuring that the applicant will comply with Chapter 1513 of the Revised Code and the rules adopted pursuant thereto while mining and reclaiming the area for which this permit is requested.

**James R. Turner, Jr.**

- (7) Has the applicant, any person or entity listed under items A (4) and (5), or any person or entity listed on the Owners and Controllers who "owned or controlled" or "owns or controls" held a coal mining permit in the United States within the five years preceding the date of this application?

Yes ☒ No ☐ If "yes," submit Permit List.

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **American Energy Corporation**

Address **43521 Mayhugh Hill Road Twp. Highway 88**

City **Beallsville** State **OH** Zip **43716**

Telephone **740-926-9152**

EIN **See Addendum Part 1, A** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>D-0425</b>	<b>OH</b>	<b>DMRM</b>	<b>33-01070/10-22-84</b>
<b>D-1159</b>	<b>OH</b>	<b>DMRM</b>	<b>33-02122/01-26-98</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray, shareholder 100%**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **The American Coal Company**

Address **29325 Chagrin Blvd**

City **Pepper Pike** State **OH** Zip **44122**

Telephone **216-765-1240**

EIN **See Addendum Part 1, A** or SSN (last 4 digits) **XXX-XX-**

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>02</b>	<b>IL</b>	<b>OFFICE OF MINES AND MINERALS</b>	<b>11-02752/10-14-1998</b>
<b>255</b>	<b>IL</b>	<b>OFFICE OF MINES AND MINERALS</b>	<b>11-02752/10-14-1998</b>
<b>257</b>	<b>IL</b>	<b>OFFICE OF MINES AND MINERALS</b>	<b>11-02752/10-14-1998</b>
<b>306</b>	<b>IL</b>	<b>OFFICE OF MINES AND MINERALS</b>	<b>11-02752/10-14-1998</b>
<b>352</b>	<b>IL</b>	<b>OFFICE OF MINES AND MINERALS</b>	<b>11-02752/10-14-1998</b>
<b>344</b>	<b>IL</b>	<b>OFFICE OF MINES AND MINERALS</b>	<b>11-02752/10-14-1998</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray, President**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corp.**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **Andalex Resource Management, Inc.**  
Address **29325 Chagrin Blvd., Suite 300**  
City **Pepper Pike** State **OH** Zip **44122**  
Telephone **216-865-1240**  
EIN **See Addendum Part 1, A** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>C/007/019</b>	<b>UT</b>	<b>Division of Oil. Gas, and Mining</b>	<b>42-02028, 42-01474, 42-01750</b>
<b>C/007/033</b>	<b>UT</b>	<b>Division of Oil. Gas, and Mining</b>	<b>42-01864</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray, Director**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **Anadalex Resources Inc**

Address **P.O. Box 10**

City **Drakesboro** State **KY** Zip **42337**

Telephone **502-476-2287**

EIN **See Addendum Part 1, A** or SSN (last 4 digits) **XXX-XX-**

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>8750028</b>	<b>KY</b>	<b>DSMRK</b>	<b>1503998/Unavalliable</b>
<b>8890107</b>	<b>KY</b>	<b>DSMRK</b>	<b>1512302/Unavalliable</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Murray Energy Corp., owner 100%**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **Anadalex Resources Inc**

Address **375 South Carbon Ave, Suite 127**

City **Price** State **UT** Zip **84501**

Telephone

EIN **See Addendum Part 1, A** or SSN (last 4 digits) **XXX-XX-**

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>C0070019</b>	<b>UT</b>	<b>DOGM</b>	<b>4202233/ 08/09/06</b>
<b>C0070033</b>	<b>UT</b>	<b>DOGM</b>	<b>4201864/ 08-09-06</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray - Director**

**Part 1: Section A**



**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **Belmont Coal, Inc.**

Address **P.O. Box 146**

City **Powhatan Point** State **OH** Zip **43942**

Telephone **740-795-5200**

EIN **See Addendum Part 1, A** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>D-1020</b>	<b>OH</b>	<b>DMRM</b>	<b>33-04397/7-31-97</b>
<b>D-0241</b>	<b>OH</b>	<b>DMRM</b>	<b>33-03048/7-2-93</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray, shareholder 100%**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **Energy Resources, Inc.**

Address **PO Box 259**

City **Brockway** State **PA** Zip **15824**

Telephone **814-265-8021**

EIN **See Addendum Part 1, A** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>24030102</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695/05-25-88</b>
<b>33901602</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695/05-25-88</b>
<b>17930120</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695/05-25-88</b>
<b>24880101</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695/05-25-88</b>
<b>24880103</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695/05-25-88</b>
<b>24890101</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695/05-25-88</b>
<b>24890102</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695/05-25-88</b>
<b>24990101</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695/05-25-88</b>
<b>24970101</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695/05-25-88</b>
<b>24980101</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695/05-25-88</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray, shareholder 100%**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **Energy Resources, Inc.**

Address **PO Box 259**

City **Brockway** State **PA** Zip **15824**

Telephone **814-265-8021**

EIN **See Addendum Part 1, A** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>24010101</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695/05-25-88</b>
<b>24900104</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695/05-25-88</b>
<b>24900103</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695/05-25-88</b>
<b>24960101</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695/05-25-88</b>
<b>24970102</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695/05-25-88</b>
<b>24970103</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695/05-25-88</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray, shareholder 100%**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corp.**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **Genwal Resources, Inc.**  
Address **29325 Chagrin Blvd., Suite 300**  
City **Pepper Pike** State **OH** Zip **44122**  
Telephone **216-865-1240**  
EIN **See Addendum Part 1, A** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>C/015/032</b>	<b>UT</b>	<b>Division of Oil. Gas, and Mining</b>	<b>42-02356, 42-01715</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray, Director**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **KenAmerican Resources, Inc.**  
Address **101 Prosperous Place, Suite 125**  
City **Lexington** State **KY** Zip **40509**  
Telephone **859-543-9220**  
EIN **See Addendum Part 1, A** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>8895009</b>	<b>KY</b>	<b>DSMRE</b>	<b>1517741/10-17-94</b> <b>1517606/10-17-94</b>
<b>8895011</b>	<b>KY</b>	<b>DSMRE</b>	<b>1518495/10-16-00</b>
<b>8899004</b>	<b>KY</b>	<b>DSMRE</b>	<b>112234/7-16-04</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray , shareholder 100%**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **Land Restoration Inc. (Merged w/KenAmerican Resources Inc. 1/5/98)**

Address **101 Prosperous Place**

City **Lexington** State **KY** Zip **40509**

Telephone **859-543-9220**

EIN **See Addendum Part 1, A** or SSN (last 4 digits) **XXX-XX-**

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>8895010</b>	<b>KY</b>	<b>DSMRE</b>	<b>1502129/2-24-95</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **Maple Creek Mining Inc.**

Address **981 Route 917**

City **Bentleville** State **PA** Zip **15314**

Telephone **724-258-2056**

EIN **See Addendum Part 1, A** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>63841302</b>	<b>PA</b>	<b>DEP</b>	<b>36-00970/6-30-1995</b>
<b>63733706</b>	<b>PA</b>	<b>DEP</b>	<b>36-00970/6-30-1995</b>
<b>63723707</b>	<b>PA</b>	<b>DEP</b>	<b>36-00970/6-30-1995</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray, shareholder 100%**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **Mon-Valley Transportation Center, Inc.**  
Address **PO Box 135, 1060 Ohio Ave.**  
City **Glassport** State **PA** Zip **15054**  
Telephone **412-673-1500**  
EIN **See Addendum Part 1, A** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>02851602</b>	<b>PA</b>	<b>DEP</b>	<b>36-08678/6-8-1995</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Part 1: Section A**



**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **OhioAmerican Energy, Inc.**

Address **34 Kelley Way**

City **Brilliant** State **OH** Zip **43913**

Telephone **740-598-4325**

EIN **See Addendum Part 1, A** or SSN (last 4 digits) **XXX-XX-**

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>D-2180</b>	<b>OH</b>	<b>ODNR,DMRM</b>	<b>3304550/1-24-06</b>
<b>D-2291</b>	<b>OH</b>	<b>ODNR,DMRM</b>	<b>3304550/3-12-07</b>
<b>D-2304</b>	<b>OH</b>	<b>ODNR,DMRM</b>	<b>33-04550/10-26-07</b>
<b>D-2312</b>	<b>OH</b>	<b>ODNR,DMRM</b>	<b>33-04550/2-26-08</b>
<b>D-2180-1</b>	<b>OH</b>	<b>ODNR,DMRM</b>	<b>33-04550/11-02-09</b>
<b>D-2180-2</b>	<b>OH</b>	<b>ODNR,DMRM</b>	<b>33-04550/11-02-09</b>
<b>D-2180-3</b>	<b>OH</b>	<b>ODNR,DMRM</b>	<b>33-04550/11-02-09</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E Murray- Director**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **The Ohio Valley Coal Company**

Address **56854 Pleasant Ridge Road**

City **Alledonia** State **OH** Zip **43902**

Telephone **740-926-1351**

EIN **See Addendum Part 1, A** or SSN (last 4 digits) **XXX-XX-**

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>D0360</b>	<b>OH</b>	<b>DMRM</b>	<b>3301159/6-20-04</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray - Director**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **The Oklahoma Coal Company**  
Address **29325 Chagrin Blvd**  
City **Pepper Pike** State **OH** Zip **44122**  
Telephone **216-765-1240**  
EIN **See Addendum Part 1, A** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>D-0230</b>	<b>OH</b>	<b>DMRM</b>	<b>N/A</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray, shareholder 100%**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **PENNAMERICAN COAL, LP**

Address **PO Box 459**

City **Black Lick** State **PA** Zip **15716-0459**

Telephone **724-248-1327**

EIN **See Addendum Part 1, A** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>32951301</b>	<b>PA</b>	<b>DEP</b>	<b>36-08525</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray, Shareholder**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **TDK Coal Sales**

Address **PO Box 259**

City **Brockway** State **PA** Zip **15824**

Telephone **814-865-8021**

EIN **See Addendum Part 1, A** or SSN (last 4 digits) **XXX-XX-**

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>03960103</b>	<b>PA</b>	<b>DEP</b>	<b>36-07707/1-14-1997</b>
<b>03940101</b>	<b>PA</b>	<b>DEP</b>	<b>36-07707/6-6-1995</b>
<b>16910104</b>	<b>PA</b>	<b>DEP</b>	<b>36-07707/5-11-1992</b>
<b>33960109</b>	<b>PA</b>	<b>DEP</b>	<b>36-07707/3-03-1998</b>
<b>16980102</b>	<b>PA</b>	<b>DEP</b>	<b>36-07707/9-10-1998</b>
<b>24970104</b>	<b>PA</b>	<b>DEP</b>	<b>36-08867/9-10-1998</b>
<b>03890105</b>	<b>PA</b>	<b>DEP</b>	<b>36-07707/9-10-1998</b>
<b>17910124</b>	<b>PA</b>	<b>DEP</b>	<b>36-07707/9-10-1998</b>
<b>17814000</b>	<b>PA</b>	<b>DEP</b>	<b>36-07707/9-10-1998</b>
<b>17900143</b>	<b>PA</b>	<b>DEP</b>	<b>36-07707/9-10-1998</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray - Director**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corportation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **TDK Coal Sales**

Address **PO Box 259**

City **Brockway** State **PA** Zip **15824**

Telephone **814-865-8021**

EIN **See Addendum Part 1, A** or SSN (last 4 digits) **XXX-XX-**

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>17900108</b>	<b>PA</b>	<b>DEP</b>	<b>36-07707/1-14-1997</b>
<b>17960119</b>	<b>PA</b>	<b>DEP</b>	<b>36-07707/6-6-1995</b>
<b>17840126</b>	<b>PA</b>	<b>DEP</b>	<b>36-07707/5-11-1992</b>
<b>03950106</b>	<b>PA</b>	<b>DEP</b>	<b>36-07707/1-9-95</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray - Director**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **UMCO Energy Inc.**

Address **981 Route 917**

City **Bentleville** State **PA** Zip **15314**

Telephone **724-258-2056**

EIN **See Addendum Part 1, A** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>63921301</b>	<b>PA</b>	<b>DEP</b>	<b>36-08375/6-8-94</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray, Director**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **UtahAmerican Energy, Inc**

Address **5375 S. Carbon Ave Suite 127**

City **Price** State **UT** Zip **84501**

Telephone **435-888-4000**

EIN **See Addendum Part 1, A** or SSN (last 4 digits) **XXX-XX-**

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>ACT 007/013</b>	<b>UT</b>	<b>DOGM</b>	<b>42-02241/2-24-1999</b>
<b>ACT 007/019</b>	<b>UT</b>	<b>DOGM</b>	<b>42-02028/4-1-1989</b>
<b>ACT 007/041</b>	<b>UT</b>	<b>DOGM</b>	<b>42-02233/3-1-1999</b>
<b>ACT 015-032</b>	<b>UT</b>	<b>DOGM</b>	<b>42-01715/11/22/1983</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray - Director**

**Part 1: Section A**



**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corp.**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **West Ridge Resources, Inc.**  
Address **29325 Chagrin Blvd., Suite 300**  
City **Pepper Pike** State **OH** Zip **44122**  
Telephone **216-865-1240**  
EIN **See Addendum Part 1, A** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>C/007/041</b>	<b>UT</b>	<b>Division of Oil, Gas, and Mining</b>	<b>42-02233</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray, Director**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **West Virginia Resources, Inc.**

Address **One Industrial Park Drive**

City **Wheeling** State **WV** Zip **26003**

Telephone **304/232-2530**

EIN **See Addendum Part 1, A** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>D0698</b>	<b>OH</b>	<b>DMRM</b>	<b>33-04614 10/28/2008</b>
<b>D0185</b>	<b>OH</b>	<b>DMRM</b>	<b>33-04614 10/28/2008</b>
<b>D0219</b>	<b>OH</b>	<b>DMRM</b>	<b>33-04614 10/28/2008</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Part 1: Section A**

- (8) Does the applicant, any person or entity listed under items A (4) and (5), or any person or entity listed on Owners and Controllers have a pending coal mining application in any state of the United States?

Yes ☒ No ☐ If "yes," submit Pending Application List.

- (9) Submit Certificate of Insurance.

**B. COMPLIANCE INFORMATION**

- (1) Has the applicant, any subsidiary, affiliate or persons controlled by or under common control with the applicant:

- (a) Had a federal or state coal mining permit suspended or revoked in the five years preceding the date of submission of this application?

Yes ☐ No ☒ If "yes," submit Suspension, Revocation & Forfeiture List.

- (b) Forfeited a mining bond or similar security deposited in lieu of bond?

Yes ☐ No ☒ If "yes," submit Suspension, Revocation & Forfeiture List.

- (2) Has the applicant been issued notices of violation (NOVs) in connection with any coal mining and reclamation operation during the three years preceding the date of submission of this application for violations of Chapter 1513 of the Revised Code or the Administrative Code, or of any federal or state law, rule, or regulation pertaining to air or water environmental protection?

Yes ☒ No ☐ If "yes," submit NOV List.

- (3) Have any unabated federal or state cessation orders (COs) and unabated air and water quality notices of violations (NOVs) been received prior to the submission date of this application by any coal mining and reclamation operation owned or controlled by either the applicant or by any person who owns or controls the applicant?

Yes ☐ No ☒ If "yes," submit Unabated Violations.

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

CERTIFICATE OF INSURANCE

Name of Insured **American Energy Corporation**

This is to certify that the policy of insurance listed below has been issued to the above named insured and is in force at this time. The policy provides bodily injury and property damage insurance for all coal mining and reclamation operations of the insured in the state of Ohio as required by 1501:13-7-07 of the Administrative Code stated below.

Name of Insurer **Federal Insurance Company**

Policy Number **37104410**

Policy Period **6/1/10-11**

Name of Underwriting Agent **Reschini Agency, Inc.**

Address of Underwriting Agent **922 Philadelphia St., Indiana, PA 15701**

Telephone No. of Underwriting Agent **724 349 1300**

In the event of cancellation or non-renewal of this policy, including non-payment of policy premiums, the insurer agrees to promptly notify: The Division of Mineral Resources Management, 2045 Morse Road, Building H-3, Columbus, Ohio 43229-6693.

Date

6/2/10

Signature of Underwriting Agent

Karen Williams

This certificate is issued as a matter of information only and confers no rights upon the Division of Mineral Resources Management. This certificate does not amend, extend or alter the coverage afforded by the policy listed above.

1501:13-7-07(B) THE PUBLIC LIABILITY INSURANCE POLICY SHALL:

- (1) BE IN EFFECT DURING THE TERM OF THE PERMIT OR ANY RENEWAL, INCLUDING THE LENGTH OF ALL RECLAMATION OPERATIONS;
- (2) PROVIDE FOR PERSONAL INJURY AND PROPERTY DAMAGE PROTECTION IN AMOUNTS ADEQUATE TO COMPENSATE ANY PERSONS INJURED OR PROPERTY DAMAGED AS A RESULT OF COAL MINING AND RECLAMATION OPERATIONS, INCLUDING THE USE OF EXPLOSIVES. THE MINIMUM INSURANCE COVERAGE FOR BODILY INJURY AND PROPERTY DAMAGE SHALL BE THREE HUNDRED THOUSAND DOLLARS FOR EACH OCCURRENCE AND FIVE HUNDRED THOUSAND DOLLARS IN THE AGGREGATE; AND
- (3) INCLUDE A RIDER REQUIRING THAT THE INSURER NOTIFY THE CHIEF WHENEVER SUBSTANTIVE CHANGES ARE MADE IN THE POLICY, INCLUDING ANY TERMINATION OR FAILURE TO RENEW.

Part 1: Section A

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PENDING APPLICATION LIST**

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**American Energy Corporation**

Application No.	Name of Regulatory Authority	State
<b>D-0425-8</b>	<b>DMRM</b>	<b>OH</b>
<b>D-0425-11</b>	<b>DMRM</b>	<b>OH</b>

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PENDING APPLICATION LIST**

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**Belmont Coal, Inc.**

Application No.	Name of Regulatory Authority	State
<b>10168</b>	<b>DMRM</b>	<b>OH</b>

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PENDING APPLICATION LIST**

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**Energy Resources, Inc.**

Application No.	Name of Regulatory Authority	State
<b>17841607</b>	<b>DEP</b>	<b>PA</b>
<b>17823701</b>	<b>DEP</b>	<b>PA</b>

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PENDING APPLICATION LIST**

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**KENAMERICAN COAL COMPANY**

Application No.	Name of Regulatory Authority	State
<b>889-5009 R-8</b>	<b>DSMRE</b>	<b>KY</b>
<b>889-9004</b>	<b>DSMRE</b>	<b>KY</b>

**Part 1: Section A**



**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PENDING APPLICATION LIST**

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**TDK Coal Sales, Inc.**

Application No.	Name of Regulatory Authority	State
<b>17814607</b>	<b>DEP</b>	<b>PA</b>
<b>17823701</b>	<b>DEP</b>	<b>PA</b>

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PENDING APPLICATION LIST**

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**THE OHIO VALLEY COAL COMPANY**

Application No.	Name of Regulatory Authority	State
<b>D-0360-14</b>	<b>DMRM</b>	<b>OHIO</b>
<b>D-0360-24</b>	<b>DMRM</b>	<b>OHIO</b>

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PENDING APPLICATION LIST**

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**OHIOAMERICAN ENERGY, INCORPORATED**

Application No.	Name of Regulatory Authority	State
<b>D-2304-1</b>	<b>DMRM</b>	<b>OH</b>
<b>D-2180-3</b>	<b>DMRM</b>	<b>OH</b>
<b>10437</b>	<b>DMRM</b>	<b>OH</b>

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PENDING APPLICATION LIST**

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**UMCO Energy, Inc. - High Quality Mine**

Application No.	Name of Regulatory Authority	State
<b>63921301</b>	<b>PA DEP</b>	<b>PA</b>

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PENDING APPLICATION LIST**

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**West Virginia Resources, Inc.**

Application No.	Name of Regulatory Authority	State
<b>10412</b>	<b>DMRM</b>	<b>OH</b>

**Part 1: Section A**

AEC 09623

Revised 02/06  
DNR-744-9016

## Part 1: Section B

(\*) If administrative or judicial proceedings have been initiated concerning any of the violations, identify the violation and provide an addendum indicating the date, location, type of proceeding, and current status.

# C. LIST OF ENTRY INFORMATION

LAND OWNER INFORMATION	OWNERSHIP INFORMATION	COUNTY	TOWNSHIP	SECTION	LOT	DEED PARCEL NO.	T-	R-
OWNER NAME: Boughner, David & R. ADDRESS: 52890 S.R. 145 CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE: 740-926-9967	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6		2-3-6 Tract No. 3 Parcel No. 4	5	5
OWNER NAME: Burdette, Stanton ADDRESS: 52876 Belmont Avenue CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE: 740-926-1926	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6		2-3-7 Parcel No. 5 Tract No. 1	5	5
OWNER NAME: Campbell, Ida ADDRESS: 52469 S.R. 145 CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE: 740-926-9118	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	12		2-3-19 Parcel No. 15, 2-3-23 Parcel No. 19, 2-3-24 Parcel No. 20	5	5
OWNER NAME: Headley, Donald & Ruth ADDRESS: S.R. 145 CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE:	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	12		2-3-21 Parcel No. 17	5	5

# C. SHORT OF ENTRY INFORMATION

LAND OWNER INFORMATION	OWNERSHIP INFORMATION	COUNTY	TOWNSHIP	SECTION	LOT	DEED PARCEL NO.	T-	R-
OWNER NAME: Hoover, G Jr. ADDRESS: 52615 Cherry Ridge Road CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE: 740-926-1812	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-3-5 Tract no. 3 P-1 T-3, 2-3-4 Parcel No. 3 Tract No. 2, 2-3-26 Parcel No. 22	5	5
OWNER NAME: Hoover, George & Pamela ADDRESS: 52450 Cherry Ridge Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1135	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-3-5 Tract No. 3 P-1 T-3, 2-3-4 Parcel No. 3 Tract No. 2, 2-3-26 Parcel No. 22, 2-3-2 Parcel No. 2	5	5
OWNER NAME: Mellott, Benjamin ADDRESS: 52291 Cherry Ridge Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE:	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-3-5 Tract No. 3 P-1 T-3, 2-3-25 Tract No. 3 Parcel No. 21, 2-3-8 Parcel No. 5 Tract No. 2, 2-3-9 Parcel No. 5 Tract No. 3	5	5
OWNER NAME: Monroe Co Park Dist. ADDRESS: S.R. 145 CITY, STATE, ZIP: TELEPHONE:	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	12		2-3-21 Parcel No. 17	5	5



# **C. SHORT OF ENTRY INFORMATION**

LAND OWNER INFORMATION	OWNERSHIP INFORMATION	COUNTY	TOWNSHIP	SECTION	LOT	DEED PARCEL NO.	T-	R-
OWNER NAME: Ogilbee, Joyce et al. ADDRESS: 52346 Crum Road CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE: 740-926-2712	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6		2-3-30 Tract No. 3 Parcel No. 25	5	5
OWNER NAME: Post, Samuel & Hazel ADDRESS: 52426 Crum Road CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE: 740-926-1652	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	12		2-3-19 Parcel No. 15	5	5
OWNER NAME: Reed, William & Bonnie ADDRESS: 52925 State Route 145 CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1422	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6 12		2-3-6 Tract No. 3 Parcel No. 4, 2-3-30 Tract no. 3 Parcel No. 25, 2-3-7 Parcel No. 5 Tract No. 1 2-3-19 Parcel No. 15	5	5
OWNER NAME: Johnson Construction Co. ADDRESS: 52360 Crum Road CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE: 740-926-1490	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6		2-3-30 Tract No. 3 Parcel No. 25	5	5

# C. RIGHT OF ENTRY INFORMATION

LAND OWNER INFORMATION	OWNERSHIP INFORMATION	COUNTY	TOWNSHIP	SECTION	LOT	DEED PARCEL NO.	T-	R-
OWNER NAME: Caldwell, Dale ADDRESS: 52385 Crum Road CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE: 740-926-1890	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	12		2-3-18 Parcel No. 14	5	5
OWNER NAME: Dillon, Mathew & Joy ADDRESS: 52358 Crum Road CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE: 740-926-9213	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-3-30 Tract No. 3 Parcel No. 25	5	5
OWNER NAME: Lucas, Peggy & Ronald ADDRESS: 52870 Crum Road CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE: 740-926-1158	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-3-30 Tract No. 3 Parcel No. 25, 2-3-7 Parcel No. 5 Tract No. 1	5	5
OWNER NAME: Susac, Steven ADDRESS: 52835 Belmont Avenue CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE: 740-926-9115	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-3-30 Tract No. 3 Parcel No. 25	5	5

# C. RIGHT OF ENTRY INFORMATION

LAND OWNER INFORMATION	OWNERSHIP INFORMATION	COUNTY	TOWNSHIP	SECTION	LOT	DEED PARCEL NO.	T-	R-
OWNER NAME: Village of Beallsville ADDRESS: 52729 Washington St. CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE: 740-926-1792	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-3-30 Tract No. 3 Parcel No. 25, 2-3-18 Parcel No. 14	5	5
OWNER NAME: Zavacry, Lewis & Marilyn ADDRESS: 52870 Belmont Avenue CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE:	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-3-7 Parcel No. 5 Tract No. 1	5	5
OWNER NAME: Jenny & Terry Ricer ADDRESS: 52856 Belmont Avenue CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE: 740-926-1172	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-3-7 Parcel No. 5 Tract No. 1	5	5
OWNER NAME: Shriver, R & Cramer, J ADDRESS: 52818 Belmont Avenue CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE: 740-926-1608	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-3-7 Parcel No. 5 Tract No. 1	5	5

# C. RIGHT OF ENTRY INFORMATION

LAND OWNER INFORMATION	OWNERSHIP INFORMATION	COUNTY	TOWNSHIP	SECTION	LOT	DEED PARCEL NO.	T-	R-
OWNER NAME: Hamilton, G. Neil ADDRESS: 53216 Crum Road CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE: 740-926-1593	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6		2-3-30 Tract No. 3 Parcel No. 25	5	5
OWNER NAME: Coss, Andrea ADDRESS: 52200 Cherry Ridge Road CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE: 740-926-1399	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6		2-3-7 Parcel No. 5 Tract No. 1	5	5
OWNER NAME: Smith, Shirley ADDRESS: 52618 Cherry Ridge Road CITY, STATE, ZIP: Beallsville, Ohio, 43716 TELEPHONE: 740-926-1204	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6		2-3-26 Parcel No. 22	5	5
OWNER NAME: Consolidated Land Company (CLC) ADDRESS: 29325 Chagrin Blvd., Suite 300 CITY, STATE, ZIP: Pepper Pike, OH 44122 TELEPHONE: 740-926-1204	<input type="checkbox"/> Surface – UG Workings area <input checked="" type="checkbox"/> Coal <input type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6		2-3-2 Parcel No. 2, 2-3-4 Parcel No. 3 Tract No. 2, 2-3-5 Tract No. 3 P-1 T-3, 2-3-6 Tract No. 3 Parcel No. 4, 2-3-7 Parcel No. 5 Tract no. 1, 2-3-8 Parcel No. 5 Tract No. 2	5	5

# C. POINT OF ENTRY INFORMATION

LAND OWNER INFORMATION	OWNERSHIP INFORMATION	COUNTY	TOWNSHIP	SECTION	LOT	DEED PARCEL NO.	T-	R-
OWNER NAME: Consolidated Land Company (CLC) ADDRESS: 29325 Chagrin Blvd., Suite 300 CITY, STATE, ZIP: Pepper Pike, OH 44122 TELEPHONE: 740-926-1204	<input type="checkbox"/> Surface – UG Workings area <input checked="" type="checkbox"/> Coal <input type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-3-9 Parcel No. 5 Tract No. 3, 2-3-26 Parcel No. 22, 2-3-30 Tract No. 3 Parcel No. 25, 2-3-25 Tract No. 3 Parcel No. 21	5	5
OWNER NAME: Consolidated Land Company (CLC) ADDRESS: 29325 Chagrin Blvd., Suite 300 CITY, STATE, ZIP: Pepper Pike, OH 44122 TELEPHONE: 740-926-1204	<input type="checkbox"/> Surface – UG Workings area <input checked="" type="checkbox"/> Coal <input type="checkbox"/> Non-coal mineral	Monroe	Sunbury	12		2-3-18 Parcel No. 14, 2-3-19 Parcel No. 15, 2-3-21 Parcel No. 17, 2-3-23 Parcel No. 19, 2-3-24 Parcel No. 20	5	5
OWNER NAME: Thompson, V.L. III & M.A. ADDRESS: Township Highway 121 CITY, STATE, ZIP: Alledonia, OH 43902 TELEPHONE: 740-926-9152	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Belmont	Washington	15		T17, T18	5	4
OWNER NAME: Natural Resource Partners ADDRESS: 601 Jefferson St., Suite 3600 CITY, STATE, ZIP: Houston, TX 77002 TELEPHONE: 713-751-7507	<input type="checkbox"/> Surface – UG Workings area <input checked="" type="checkbox"/> Coal <input type="checkbox"/> Non-coal mineral	Belmont	Washington	15		T17, T18	5	4

- (2) Provide the following information for the holders of record of any leasehold interest in the coal to be mined.

Leaseholder Name **American Energy Corporation**

Address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716** Telephone **(740) 926-9152**

Leaseholder Name

Address

City                      State                      Zip                      Telephone

Submit and identify additional pages necessary to complete response.

- (3) Are there purchasers of record under a real estate contract of the coal to be mined?

Yes ☐ No ☒ If "yes," submit Purchasers of Record.

- (4) Is any owner, holder or purchaser listed in items C (1) or (2), a business entity other than a single proprietorship?

Yes ☒ No ☐ If "yes," submit Other Business Entities.

- (5) Does the applicant hold lands, interests in lands, options or pending bids on interests for lands that are contiguous to this application area?

Yes ☒ No ☐ If "yes," list those that are contiguous to this application area.

**Consolidated Land Company (CLC) owns the coal on all property parcels contiguous to the primary application permit boundary referenced as D-0425-15.**

**National Resource Partners (NRP) owns the coal on property parcels contiguous to the secondary application permit boundary referenced as D-0425-15A. See Future Areas Map as an Addendum to these items.**

- (6) Is it anticipated that mining permits would be sought for any of those lands described in item C (5) above?

Yes ☒ No ☐ If "yes," describe contiguous properties for which permits may be sought, to include the size, sequence and timing of future mining permits.

**The Applicant has long range plans to permit some of the adjacent coal properties described in above Item 5, contiguous to the Application permit boundary. This activity is proposed to the West and Northwest in Sunbury Twp. Section 12, of Monroe County. Details are not available at this time but the timing is roughly projected for 2014 and 2015.**

**The Applicant also has immediate plans to permit some of the adjacent coal properties described in above Item 5, contiguous to the Application permit boundary referenced as D-0425-15A. This activity is proposed to the**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OTHER BUSINESS ENTITIES**

Applicant's Name **American Energy Corporation**

A separate attachment is to be submitted for each business entity.

Name of business entity **American Energy Corporation**

Statutory agent **C T Corporation System**

Street Address **1300 East 9th St.**

City **Cleveland** State **Ohio** Zip **44114-1425**

Person's name **Robert E. Murray** Position **Director, President**

Street Address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

Person's name **Michael McKown** Position **Secretary**

Street Address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

Person's name **James Turner Jr.** Position **Treasurer**

Street Address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

Person's name **Robert Putsock** Position **Assistant Treasurer**

Street Address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

**Part 1: Section C**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OTHER BUSINESS ENTITIES**

Applicant's Name **American Energy Corporation**

A separate attachment is to be submitted for each business entity.

Name of business entity **Consolidated Land Company**

Statutory agent **Stephen C. Ellis #842696**

Street Address **925 Euclid Avenue, Suite 1100**

City **Cleveland** State **Ohio** Zip **44115**

Person's name **Robert D. Moore** Position **President, Treasurer, Assistant Secretary**

Street Address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Ohio** Zip **44124**

Person's name **Michael O. McKown** Position **Secretary**

Street Address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Ohio** Zip **44124**

Person's name **Elmer A. Mottillo** Position **Assistant Secretary**

Street Address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Ohio** Zip **44124**

Person's name                      Position

Street Address

City                      State                      Zip

**Part 1: Section C**



**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OTHER BUSINESS ENTITIES**

Applicant's Name **American Energy Corporation**

A separate attachment is to be submitted for each business entity.

Name of business entity **Johnson Construction**

Statutory agent **None - Sole Proprietor**

Street Address

City        State        Zip

Person's name **Steve Johnson** Position **Sole Proprietor**

Street Address **52360 Crum Rd.**

City **Beallsville** State **Ohio** Zip **43716**

Person's name        Position

Street Address

City        State        Zip

Person's name        Position

Street Address

City        State        Zip

Person's name        Position

Street Address

City        State        Zip

**Part 1: Section C**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**OTHER BUSINESS ENTITIES**

Applicant's Name **American Energy Corporation**

A separate attachment is to be submitted for each business entity.

Name of business entity **Natural Resource Partners**

Statutory agent **NA**

Street Address

City            State            Zip

Person's name **Corbin J. Robertson, Jr.** Position **Chief Executive Officer and Chairman of the Board**

Street Address **601 Jefferson Street**

City **Houston** State **Texas** Zip **77002**

Person's name **Nick Carter** Position **President and Chief Operating Officer**

Street Address **601 Jefferson Street**

City **Houston** State **Texas** Zip **77002**

Person's name **Dwight L. Dunlap** Position **Chief Financial Officer and Treasurer**

Street Address **601 Jefferson Street**

City **Houston** State **Texas** Zip **77002**

Person's name **Kevin F. Wall** Position **Executive Vice President - Operations**

Street Address **601 Jefferson Street**

City **Houston** State **Texas** Zip **77002**

**Part 1: Section C**

**East and Northeast in Washington Twp. Section 15, of Belmont County and would connect to this . Timing is projected for 2011 and 2013.**

- (7) Identify the right of entry documentation that is being provided that allows for coal mining operations within the underground workings:

☐  
☒

A copy of the right-of-entry documents attached as addenda, or  
A Right-of-Entry Affidavit

## **Summary of Mining Rights**

**Consolidated Land Company (CLC)  
to  
American Energy Corporation (AEC)**

**ITEM 1.** Mining rights to the following Parcels contained in Volume 11 Page 998: Tract No. 2 Parcel No. 2 (**2-3-2**)

"Together with the free and uninterrupted right of way under, into and upon said land, at such points, and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining and ventilating and carrying away said coal, etc. (hereby waiving all surface damages or damages of any sort arising therefrom or from the removal of said coal), together with the privilege of mining and removing through said described premises other coal belonging to the grantee, his heirs and assigns, or which may be acquired by said grantee, his heirs and assigns. Said grantor, for himself and his heirs and assigns, reserve the right to drill and operate through said coal for oil and gas. It is understood and agreed between the parties hereto that the said grantor, and his heirs, shall be paid at the rate of \$100.00 per acre for all surface land taken and used for mining said coal by said grantee, his heirs and assigns."

**ITEM 2.** Mining rights to the following Parcels contained in Volume 11 Pages 989 – 999: Tract No. 2: (**2-3-4**); Tract No. 3 (**2-3-5**); Parcel No. 4 (**2-3-6**); Page 1006: Parcel No. 15 (**2-3-19**).

"Together with the free and uninterrupted right of way under, into and upon said land, at such points, and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining and ventilating and carrying away said coal, etc. (hereby waiving all surface damages or damages of any sort arising therefrom or from the removal of said coal), together with the privilege of mining and removing through said described premises other coal belonging to the grantee, his heirs and assigns, or which may be acquired by said grantee, his heirs and assigns. Said grantor, for himself and his heirs and assigns, reserve the right to drill and operate through said coal for oil and gas. It is understood and agreed between the parties hereto that the said grantor, and his heirs, shall be paid at the rate of \$100.00 per acre for all surface land taken and used for mining said coal by said grantee, his heirs and assigns."

**ITEM 3.** Mining rights to the following Parcels contained in Volume 11 Page 1000 – 1001: Parcel No. 5: Tract No. 1: (**2-3-7**); Tract No. 2: (**2-3-8**); Tract No. 3: (**2-3-9**);

"Together with the free and uninterrupted right of way under, into and upon said land, at such points, and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining and ventilating and carrying away said coal, etc. (hereby waiving all surface damages or damages of any sort arising therefrom or from the removal of said coal), together with the privilege of mining and removing through said described premises other coal belonging to the grantee, his heirs and assigns, or which may be acquired by said grantee, his heirs and assigns. Said grantor, for himself and his heirs and assigns, reserve the right to drill and operate through said coal for oil and gas. It is understood and agreed between the parties hereto that the said grantor, and his heirs, shall be paid at the rate of \$100.00 per acre for all surface land taken and used for mining said coal by said grantee, his heirs and assigns."

**ITEM 4.** Mining rights to the following Parcels contained in Volume 11 Page 1005 – 1006: Parcel No. 14: (2-3-18); Parcel No. 17: (2-3-21); Parcel No. 19 (2-3-23);

"TOGETHER with the free and uninterrupted use and enjoyment of the right of way into and under said tract of land at such points and in such manner as may be considered proper and necessary for the advantageous and economical operation of, and in the digging, mining and carrying away said coal and without liability therefore, and hereby waiving any and all damages that might or could arise therefrom by reason of such digging, mining and carrying away of said coal, together with the privilege of carrying, transferring and removing through said described premises said coal and other coal now owned or hereafter acquired by said grantee, its successors and assigns, and generally freed, clear and discharged of any servitude whatever to the overlying land or anything therein or thereon."

**ITEM 5.** Mining rights to the following Parcels contained in Volume 11 Pages 1008 - 1009: Parcel No. 20, (2-3-24);

"It is hereby agreed that said grantee, his heirs and assigns, shall have the right to mine and carry away all of said coal, and with the mining rights and privileges necessary or convenient to such mining or removal of same I without being required to provide for the support of the overlying strata and without liability to the said surface or anything therein or thereon by reason of the mining or removal of said coal, or the manufacture of the same or other coal into coke or other products, at such places as may be selected by said grantee, his heirs or assigns. Together with the right of mining and removing under said described premises other coal or matter belonging to, or that may hereafter belong to said grantee, his heirs or assigns. And with the right to said grantee, his heirs and assigns, to purchase at any time, any number of acres of the surface of said land, by paying therefore at the rate of One Hundred Dollars (\$100.00) per acre; upon which payment the owners of the land under which the coal is hereby conveyed, their heirs and assigns, shall execute and deliver to the said grantee, his heirs and assigns, a deed

therefor, in fee simple, free of all encumbrances. But it is understood and agreed between the parties hereto that the owner of said land, or lessees, shall have the right to drill for oil and gas through said coal providing that such drilling shall not in any manner interfere with the mining of said coal."

**ITEM 6.** Mining rights to the following Parcels contained in Volume 11 Pages 989 – 1009: Tract No. 3, Parcel No. 21 (2-3-25).

"All oil and gas in and underlying said described premises is excepted and reserved, with all rights and privileges on the surface of the lands to lease, collect rentals and royalties, to drill and operate for oil and gas, as now provided for in oil and gas lease now in existence and on said above described lands."

BEING all the coal and mining rights excepted and reserved in deed dated July 8, 1922 to Cecil H. Perkins from Margaret C. Egger, et al, recorded in Vol. 92, Page 500, Records of Deeds, Monroe County, Ohio, which reads as follows: "All coal in the underlying above described lands is herein excepted and reserved, and any surface land that may be needed by the Grantors, their executors, administrators and assignees, for the mining, operating and removal of the coal shall be paid for the agreed price of One Hundred Dollars per acre, and all surface damages are excepted and waived ... be the same more or less but subject to all legal highways," and said coal and mining rights were conveyed by Margaret C. Egger, et al, to the Monbel Company by deed dated September 28, 1948 and recorded in Vol. 122, Page 100, Records of Deeds, Monroe County, Ohio.

**ITEM 7.** Mining rights to the following Parcels contained in Volume 11 Page 989 – 1010: Parcel No. 22 (2-3-26).

Together with the mining rights reserved in the conveyance dated April 1, 1908, to Israel Coon by William A. Williams and his wife Mary E. Williams, which reads as follows: "Reserving all coal, oil and gas beneath the surface and reserving the right to mine, lease, sell, operate for, and market the same, and all the privileges necessary to operate for and mine the same, including water and pipeline rights, the right of way over and under the surface, and the rights of ingress and egress without being held liable for damage to the surface and the growing crops," and the coal and mining rights of said reservation were conveyed by William A. Williams to Board of Foreign Missions of the Methodist Episcopal Church by deed dated November 13, 1916 and recorded in Vol. 84, Page 416 of the Records of Deeds, Monroe County, Ohio.

**ITEM 8.** Mining rights to the following Parcels contained in Volume 11 Page 989 – 1012: Parcel No. 25 (2-3-30).

"TOGETHER with the free and uninterrupted right of way into, upon, and under said land at such points and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining and ventilating and carrying away said coal (hereby waiving all surface damages or damages of any sort arising therefrom or from the removal of all of said coal) together with the privilege of mining and removing through, upon and over said described premises other coal belonging to said party of the record part, his heirs and assigns, or which may hereafter be acquired."

SAID grantors herein, for themselves, their heirs and assigns, hereby reserve the right to drill and operate through said coal for oil and gas or other minerals without liability for damages growing out of the same. It is further made a condition in this deed, and the same is taken subject thereto, that if any surface ground is necessary to be taken in the operation for coal under this deed, the same may be taken, but the amount of which and the location thereof is to be determined when the same is desired to be used and at a price then to be mutually agreed upon between the grantors in this deed or their assigns, and the grantees herein and his assigns."

"SAID grantees shall have the right to enter upon said land to drill and test said coal without liability for damages."

"Further, Seller shall quit claim to Purchaser the following mining rights:

Together with the full right to explore for, test, work, mine, produce, develop, clean, process, sell and remove any or all of the coal in and underlying the premises by any surface or underground mining method or machinery, whether now or hereafter known, including, but not limited to, the strip mining process, auger or highwall mining process, and longwall mining process; the right of ingress, egress and regress to, from, over and across said premises and adjoining premises owned or controlled by Grantee for the purpose of removing and transporting coal from within or without said premises without additional charge; the right to bring upon said premises men, machinery, materials and equipment necessary, convenient or useful for the exploring, testing, mining and marketing of said coal by the methods hereunder authorized; the right to construct, erect, use, maintain, repair, replace, move, remove, and relocate in or under the premises roads, conveyor systems, machinery, railroad tracts, shops, power and communications lines and other equipment and facilities; the right to transport personnel, supplies, equipment, coal and other materials into, through and under said premises; the right to mine said coal without any requirement to provide any lateral or subjacent support to the premises, or any liability to Grantee for any damage which may result either to the surface of, or any strata in, on or under said premises or to any surface or underground water supplies or sources located thereon or therein or to any structures now on or hereafter constructed on said premises; and all such other rights, powers and privileges as may be necessary, useful or incidental thereto, including,

without limitation, the right to make and use openings and underground passages for any purposes, including, but not limited to, ventilation and drainage, and to disturb so much of the surface and subsurface of the premises as may be useful or incidental in accordance with the mining methods adopted by Grantee, including the rights to deposit spoil, rock earth and gob from said premises or adjoining premises, on said premises."

"The Grantee shall have the right to mine the fifty (50) foot property line barrier wherever Grantee controls, coal adjacent to said premises or wherever Grantee secures a waiver of the fifty (50) foot property line barrier requirement from owners of, or operators upon, adjacent properties."

**Natural Resource Partners (NRP)  
to  
American Energy Corporation (AEC)**

**ITEM 1.** Mining rights to the following Parcels contained in Volume 109 of Deeds, Page 387-390, Belmont County Records: Tract No. **T17, T18**

"Together with the free and uninterrupted right of way into upon and under said coal and land at such points and in such manner as may be proper and necessary for the purpose of digging, mining, draining, ventilating and carrying away said coal hereby waiving all surface damages or damages of any sort arising therefrom or through the removal of all of the said coal; together with the privilege of mining and removing through and over said described premises other coal belonging to said party of the second part his heirs and assigns or which may hereafter be acquired by said party of the second part.

Said parties of the first part reserve the right to drill for oil and gas through the coal but not so as to interfere with any entry or opening that may have been made through said coal for the purpose of mining or removing same and in case any oil or gas well should be drilled through said coal or coal mine such well shall be cased through the coal with iron or steel pipe which shall be allowed to remain permanently to protect such coal or coal mine from being injured by either water or gas escaping into said coal or coal mine. To have and to hold said coal, coal property, lands and premises with all the privileges and appurtenances thereunto belonging to the said Joseph N. Perkins heirs and assigns forever."



OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

RIGHT-OF-ENTRY AFFIDAVIT

Applicant's Name **American Energy Corporation**

RIGHT-OF-ENTRY AFFIDAVIT

State of **Ohio**, **Belmont** County, ss. **James R. Turner, Jr.** being first duly sworn, says that the following described documents convey to the applicant the legal right explained below and is a subject of litigation as shown below.

Type of document **Lease**

Execution Date **February 1, 2002**

Expiration Date **Until all mineable and merchantable coal has been depleted**

Parties: From **Consolidated Land Company** to **American Energy Corporation**

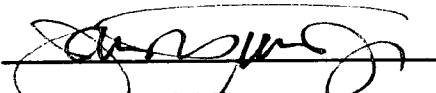
Description of land: Number of Acres **162.7**

County **Monroe** Township **Sunsbury**

Section **6 & 12** Lot

Explanation of legal rights claimed **See Addendum to Right-of-Entry Affidavit**

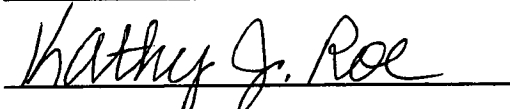
Pending litigation Yes ☐ No ☒

  
Signature of Affiant

10/8/10  
Date

TREASURER  
Position

Sworn to before me and subscribed in my presence this 8<sup>th</sup> day of, October, 2010

  
Notary Public



KATHY J. ROE  
Notary Public, State of Ohio  
My Commission Exp. Dec. 14, 2014

Part 1: Section C

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

RIGHT-OF-ENTRY AFFIDAVIT

Applicant's Name **American Energy Corporation**

RIGHT-OF-ENTRY AFFIDAVIT

State of **Ohio**, **Belmont** County, ss. **James R. Turner, Jr.** being first duly sworn, says that the following described documents convey to the applicant the legal right explained below and is a subject of litigation as shown below.

Type of document **Lease**

Execution Date **1/20/1999**

Expiration Date **None**

Parties: From **Natural Resource Partners, LP** to **American Energy Corporation**

Description of land: Number of Acres **2.5**

County **Belmont** Township **Washington**

Section **15** Lot

Explanation of legal rights claimed **See Addendum to Part1, Item C(7)(b)**

Pending litigation Yes ☐ No ☒

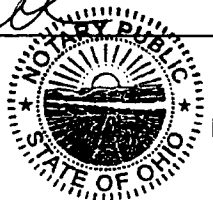
  
Signature of Affiant

10/8/10  
Date

TREASURER  
Position

Sworn to before me and subscribed in my presence this 8<sup>th</sup> day of, October, 2010

  
Notary Public



KATHY J. ROE  
Notary Public, State of Ohio  
My Commission Exp. Dec. 14, 2014

Part 1: Section C

**D. AREAS WHERE MINING IS PROHIBITED OR LIMITED**

- (1) Is this application area within an area designated unsuitable for coal mining operations or under study for designation in an administrative proceeding?

Yes ☐ No ☒

If "yes," did the applicant make substantial legal and financial commitments in this application area prior to January 4, 1977? Yes ☐ No ☐ If "yes," provide documentation supporting the assertion that the commitments were made prior to January 4, 1977.

**E. PERMIT TERM AND RELATED INFORMATION**

- (1) Anticipated/actual date for:

(a) Starting mining operations **January, 2011**

(b) Terminating mining operations **January, 2012**

- (2) Does the applicant propose a permit term in excess of five (5) years?

Yes ☐ No ☒ If "yes," submit an addendum with the information required by 1501:13-4-03(E)(3), Ohio Administrative Code.

- (3) Horizontal extent of shadow area over life of permit in acres:

(a) Full Coal Recovery/Longwall Mining Acreage **125.5**

(b) Room and Pillar Acreage **39.7**

(c) Total Acres **165.2** (Shadow Area)

**F. PUBLIC NOTICE**

- (1) In the space below, provide the name and address of the public office where a complete copy of this permit application is to be filed.

**Monroe County Courthouse  
Monroe County Recorder's Office  
101 North Main Street  
Woodsfield, Ohio 43793**

**and**

**Belmont County Courthouse  
Recorder's Office  
101 West Main Street  
St. Clairsville, Ohio 43950**

- (2) In the space below, list the name and address of the newspaper and provide the text of the advertisement that is to be published in a newspaper of general circulation in the locality of this application area. Provide proof of publication.

### **Public Notice**

**American Energy Corporation, 43521 Mayhugh Hill Road, Beallsville, Ohio 43716, has submitted an underground coal mining application D-425-15 to the Ohio Department of Natural Resources, Division of Mineral Resources Management. The primary application area is located in Monroe County, Ohio, Sunbury Township in Sections 6 and 12, T-5 R-5. The application contains 162.7 underground acres and is located on the Woodsfield 7-1/2 Minute USGS Quadrangle Map, approximately on the north boundary of Beallsville, Ohio Corporation limits.**

**The secondary application area is located in Belmont County, Ohio, Washington Township, T-5 R-4 in Section 15. The application contains 2.5 underground acres and is located on the Armstrong Mills 7 1/2 Minute USGS Quadrangle Map, approximately 1.5 miles southeast of Armstrong Mills, Ohio. This coal mining application will remove coal using the underground mining methods, specifically the room/pillar and longwall mining methods.**

**The application is on file at the Monroe County Courthouse, Recorder's Office, 101 N. Main Street, Woodsfield, Ohio 43793 and Belmont County Courthouse, Recorder's Office, 101 West Main Street, St. Clairsville, Ohio 43950 for public viewing. Written comments or requests for an informal conference may be sent to the Division of Mineral Resources Management, 2050 E. Wheeling Avenue, Cambridge, Ohio 43725-2159 within (30) days after the last date of publication of this notice.**

PROOF OF PUBLICATION

The State of Ohio  
County of Belmont, ss:

The undersigned, being sworn, says that he or she is an employee of Eastern Ohio Newspapers, Inc., A Corporation, publisher of the Times Leader a newspaper published in Martins Ferry, Belmont County, Ohio, each day of the week and of general circulation in said city and county; that it is a newspaper meeting the requirements of sections 7.12 and 5721.01 Ohio Revised Code as amended effective September 24, 1957; that affiant has custody of the records and files of said newspaper; and that the advertisement of which the annexed is a true copy, was published in said newspaper on each of the days in the month and year stated, as follows:

Sept 4, 11, 18, 25

2010

Candace S. Crie well

Subscribed by Affiant and sworn to before me, this 25<sup>th</sup> day of Sept, A.D. 2010.

Rebecca L. Anderson  
Notary Public



REBECCA L. ANDERSON  
Notary Public, State of Ohio  
My Commission Expires Nov. 25, 2011

Printer's Fee \$ 359.24

Notary's Fee \$ \_\_\_\_\_

The Times Leader  
Martins Ferry, Ohio

Public Notice

American Energy Corporation, 43521 Mayhugh Hill Road, Beallsville, Ohio 43716, has submitted an underground coal mining application D-0425-15 to the Ohio Department of Natural Resources, Division of Mineral Resources Management. The application contains 165.2 underground acres. The primary application area of 162.7 acres is located in Monroe County, Ohio, Sunbury Township in Sections 6 and 12, T-5 R-5, located on the Woodsfield 7-1/2 Minute USGS Quadrangle Map, approximately on the north boundary of Beallsville, Ohio Corporation limits. The secondary application area comprising of 2.5 underground mining

Monroe County, Ohio, Washington Township, T-5 R-4 in Section 15 and is located on the Armstrong Mills 7-1/2 Minute USGS Quadrangle Map, approximately 1.5 miles southeast of Armstrong Mills, Ohio. This coal mining application will remove coal using the underground mining methods, specifically the room/pillar and longwall mining methods. The application is on file at the Monroe County Courthouse, Recorder's Office, 101 N. Main Street, Woodsfield, Ohio 43793 and Belmont County Courthouse, Recorder's Office, 101 West Main Street, St. Clairsville, Ohio 43950 for public viewing. Written comments or requests for an informal conference may be sent to the Division of Mineral Resources Management, 2050 E. Wheeling Avenue, Cambridge, Ohio 43725-2159 within (30) days after the last date of publication of this notice.

TL Adv. - 4 Fri. - Sept. 4,  
11, 18, 25

## **PART 2: ENVIRONMENTAL RESOURCES INFORMATION**

### **A. CULTURAL, HISTORIC, AND ARCHEOLOGICAL INFORMATION**

- (1) In order to address the nature of cultural, historic and archeological resources in planned subsidence operations, submit Archeology - Underground.
- (2) Submit an addendum indicating the method to be used to identify historic properties on planned subsidence areas as mining progresses.

### **B. GEOLOGY DESCRIPTION**

- (1) Submit an addendum describing the geology within the proposed shadow and adjacent areas and down to and including the deeper of either the first stratum below the lowest coal seam to be mined or any aquifer below the lowest coal seam to be mined which may be adversely affected by mining. The description shall also include information on the areal and structural geology of the shadow and adjacent areas and any other geologic parameters, which may influence the probable hydrologic consequences and protection of the hydrologic balance from material damage outside of the permit area, and which may influence the required reclamation.
- (2) Submit an addendum describing how the areal and structural geology may affect the occurrence, availability, movement, quantity, and quality of potentially affected surface and ground waters.
- (3) For those areas within the shadow area where the stratum above the coal seam to be mined will not be removed, submit Drilling Report - Underground. Submit approved test hole variance request, if applicable.

### **C. GROUND WATER INFORMATION**

- (1) Submit Ground Water Description that describes the ground water hydrology of the proposed shadow area and adjacent area. The Ground Water Description is to include information on each water-bearing stratum or zone, including the first water-bearing stratum below the coal to be mined.
- (2) Are there any wells on the proposed shadow area and adjacent area? Yes ☒ No ☐ If "yes," submit Ground Water Inventory.
- (3) Are there any developed springs on the shadow area and adjacent area? Yes ☒ No ☐ If "yes," submit Ground Water Inventory, and show location on the hydrology map. Also, show location of undeveloped springs on the hydrology map.
- (4) Are there any public water supply sources on the proposed shadow area and adjacent area? Yes ☐ No ☒ If "yes," submit Ground Water Inventory, and show location on the hydrology map.

## GEOLOGY DESCRIPTION

### Monroe County/Beallsville Mining Area

The D-0425-15 area of the Century Mine is located in Monroe and Belmont County in southeastern Ohio. The topography of the entire application area is typical of the Appalachian Plateau Province and is characterized by narrow rounded ridges and deep V-shaped valleys dissecting the terrain, which is underlain by essentially horizontal sedimentary rocks. Topographic relief with the D-0425-15 Application Area is approximately 160 feet. The lowest surface elevation within the application area is approximately 1110 feet located in the eastern half of Section 12. The highest surface elevation within the application area is approximately 1270 located in the western half of Section 6.

Stratigraphy of the proposed application area is formed by the Monongahela formation of the Pennsylvanian period, and the Dunkard Group of Permian time. The primary strata of both sections consists of an alternating sequence of limestone, sandstone, shale, claystone, and coal. See Geologic Cross Section A-A'.

The Monongahela formation averages 250 feet in thickness within the proposed shadow area. In ascending order, it occupies the interval from the Pittsburgh #8 coal seam to the Waynesburg #11 coal seam. The primary rock units are limestone, shale, and claystone. Limestone forms 15 to 63% of this stratigraphic interval. As a result of longwall mining, the immediate strata overlying the Pittsburgh #8 coal seam will cave to a height of 3 to 6 times the mining height, depending on the bulking factor of roof strata. The beds above this caved zone are providing some support by the caved rock but may sag and give rise to bed separation and may be subject to fracturing to heights 24 to 54 times the mining height (120 to 270 feet above the mine). This is the prevalent theory. It is therefore possible that coalbeds overlying the Pittsburgh (No. 8) coalbed, within the interval cited, may or may not be affected.

The Dunkard group is approximately 340 feet thick within the proposed shadow area, occupying the interval from the Waynesburg #11 coal seam to the ground surface. The primary rock units here are shale and claystone. These soft units form about 76 percent of this stratigraphic interval. This strata is primarily located within the constrained zone of disturbance resulting from longwall mining. The constrained zone is defined as that interval above 24 to 54 times the mining height and below 50 feet from the ground surface. This strata is expected to be sufficiently confined to prevent development of any fractures. Rock beds here will tend to absorb most of the strain energy without fracturing.

ADDENDUM TO PART 2, ITEM B(1)  
AMERICAN ENERGY CORPORATION  
CENTURY MINE  
PERMIT D-0425-15

Strata close to the surface, however, are not sufficiently confined and may move in any direction. Surface cracks may be produced from tensile strains resulting from longwall mining. The depth of these cracks is generally estimated to be less than 50 feet.

The main safety against inflow of groundwater into the Century Mine is afforded by the constrained zone. The nature and thickness of the individual beds found here are of particular importance. Through extensive core drilling, multiple beds of claystone, with total thicknesses of 2 to 197 feet, have been identified. These claystone beds are relatively impermeable and generally capable of absorbing large amounts of strain energy before fracturing. It is the applicant's opinion the sufficient claystones are in-place to provide an adequate barrier against inflow from surface water and shallow groundwater disruptions caused by longwall mining. The minimum cover within the mining panels is 410 feet. The rock strata of northern Monroe County typically form a gentle monocline that dips southeasterly at grades less than one percent. This dip trend accurately represents the proposed application area with the base elevation of the #8 coal seam ranging from less than 695 feet in the southeast to approximately 725 feet in the northwest corner.

### Belmont County Mining Area

The Century Mine is located in Belmont County in southeastern Ohio. The topography of the entire application area is typical of the Appalachian Plateau Province and is regionally characterized by narrow rounded ridges and deep V-shaped valleys dissecting the terrain, which is underlain by essentially horizontal sedimentary rocks. The areal footprint of the application area is 2.5 acres and therefore very small consisting of an end of a ridgetop and slope. The geology of the application area should be the same as the bordering D-0425-12 area. Topographic relief within the Application Area is approximately 60 feet. The lowest surface elevation within the application area is approximately 1200 feet located on the SW slope of the ridge. The highest surface elevation within the application area is approximately 1260 located on top of the ridge. See Geologic Cross Section A-A'.

Stratigraphy of the proposed application area is formed by the Monongahela formation of the Pennsylvanian period, and the Dunkard Group of Permian time. The primary strata of both sections consists of an alternating sequence of limestone, sandstone, shale, claystone, and coal.

The Monongahela formation averages 250 feet in thickness within the proposed shadow area. In ascending order, it occupies the interval from the Pittsburgh #8 coal seam to the Waynesburg #11 coal seam. The primary rock units are limestone, shale, and claystone. Limestone forms 15 to 63% of this stratigraphic interval. As a result of longwall mining, the immediate strata overlying the Pittsburgh #8 coal seam will cave to a height of 3 to 6 times the mining height, depending on the bulking factor of roof strata. The beds above this caved zone are provided some support by



ADDENDUM TO PART 2, ITEM B(1)  
AMERICAN ENERGY CORPORATION  
CENTURY MINE  
PERMIT D-0425-15

the caved rock but may sag and give rise to bed separation and may be subject to fracturing to heights 24 to 54 times the mining height (120 to 270 feet above the mine).

The Dunkard group is approximately 425 feet thick within the proposed shadow area, occupying the interval from the Waynesburg #11 coal seam to the ground surface. The primary rock units here are shale and claystone. These soft units form about 76 percent of this stratigraphic interval. Coal seams above the #8 will not be affected by the mining operation. The rock strata of Belmont County typically form a gentle monocline that dips southeasterly at grades less than one percent. This dip trend accurately represents the proposed application area with the base elevation of the #8 coal seam ranging from approximately 650 feet in the east to approximately 680 feet in the northwest corner.

## GEOLOGICAL IMPACT OF COAL REMOVAL UPON GROUNDWATER

### Monroe County/Beallsville Mining Area

The geological impact of coal removal is expected to vary from short term to long term. The Pittsburgh #8 coal seam will be mined, and in this area has dip of approximately 0.5 % to the southeast, with the strike to the northeast. Groundwater occurs in this area in several disconnected saturated zones associated with the occurrence of the coal seams and underlying claystone units that prevent downward migration of the groundwater. Groundwater is generally limited to within 100 feet of the surface. Since primary porosity in the rock units are traditionally poor, nearly all of the ground water in this area of Ohio occurs as secondary porosity in the joints, cleats, fractures, and bedding planes of the rocks.

As longwall mining progresses, a caved area occurs immediately over the coal seam mined. Above this area, fractures occur in hard rocks and extend upward to about 200 feet above the coal seam. In the area above these fracture, a zone known as the continuous deformation zone develops where rocks bend down and form the classic subsidence basin. In the center of the basin, the rocks may be fractured and bedding planes may open as a result of this deformation. This process provides new openings to contain additional ground water, with a lowering of the phreatic surface of the water in the area. After mining, the aquifers are more connected and provide a larger source of water for well recharge.

The north west section of the permit will be mined using the room and pillar method. No subsidence is expected to occur from the room and pillar mining activities. Aquifers not associated with the #8 coal will not be impacted in this area.

The potential exists to re-drill existing wells or to drill new wells after mining. Groundwater still is available after subsidence. When subsidence occurs, the water levels in some wells drops, sometimes to below the bottom of the well bore. Groundwater is not lost to the mine, but the water table is lowered in response to changes in rock permeability. The Century mine is a dry mine which indicates that the groundwater does not flow into the mine. Rather, layers of rock that act as aquatards prevent downward migration of water into the mine. The other layers of rock, being more plastic than elastic, tend to fracture or the bedding planes separate and make more channels for the ground water to reside. Existing wells can be deepened or new ones drilled to encounter the new water table and to increase well bore reservoir storage to provide similar quantities of water after mining.

The geologic structures in the application area consist of gently folded rocks that dip to the southeast at approximately 26 feet per mile. Overburden thickness above the Pittsburgh seam ranges from 435 feet to approximately 580 feet. While geologic structure can influence regional groundwater flow patterns, local variations in hydraulic properties of the rocks tend to accentuate localized flow systems.

In summary, the coal removal is expected to have some impact on the ground water in the Application's area. The impacts are described in Part 3, Item C.

ADDENDUM TO PART 2, ITEM B(2)  
AMERICAN ENERGY CORPORATION  
CENTURY MINE  
PERMIT D-0425-15

Belmont County Mining Area

The areal footprint of the application area is 2.5 acres and therefore very small. The Pittsburgh #8 coal seam will be mined by room and pillar method for entries only. The overall geology in this area has the same characteristics with a dip of approximately 0.5 % to the southeast, with the strike to the northeast as the adjacent area, D-0425-12. Groundwater occurs in this area in several disconnected saturated zones associated with the occurrence of the coal seams and underlying claystone units that prevent downward migration of the groundwater. Groundwater is generally limited to within 100 feet of the surface. Since primary porosity in the rock units is poor, nearly all of the ground water in this area of Ohio occurs as secondary porosity in the joints, cleats, fractures, and bedding planes of the rocks. There should be little to no geological impact of coal removal upon the groundwater due to room and pillar causing no subsidence.

As the adjacent area, D-0425-12, the geologic structures in the application area consist of gently folded rocks that dip to the southeast at approximately 22 feet per mile. Overburden thickness above the Pittsburgh seam ranges from a low of approximately 550 feet to approximately 610 feet. While geologic structure can influence regional groundwater flow patterns, local variations in hydraulic properties of the rocks tend to accentuate localized flow systems. Since no wells or used groundwater sources are found within the application area, there should be no affectment of the groundwater within the application area due to mining.

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCE MANAGEMENT**

**DRILLING REPORT - UNDERGROUND**

Applicant's Name: American Energy Corporation

Drill Hole # AEC-2001-26

State Plane Coordinates: X: 2380612.76 Y: 678398.17  
(NAD 1983 Ohio South)

Surface Elevation: 1230.00

Lithology	H <sub>2</sub> O*	Thickness	Physical Properties
Casing		24.00	
Claystone	*	4.70	cv, ev
Sandstone	*	3.70	cs, es
Shale	*	3.45	cm, em
Claystone	*	5.85	cv, ev
Shale		3.65	cm, em
Claystone		0.50	cv, ev
Shale	*	3.45	cm, em
Claystone	*	29.85	cv, ev
Shale		2.45	cm, em
Sandstone		3.15	cs, es
Shale		5.15	cm, em
Sandstone		1.20	cs, es
Shale		8.10	cm, em
Claystone		17.55	cv, ev
Shale		7.10	cm, em
Claystone		3.35	cv, ev
Shale		16.90	cm, em
Claystone		4.05	cv, ev
Shale		0.85	cm, em
<b>Bone, coal layers, Washington No. 12</b>		<b>1.65</b>	<b>ac, cv, ev</b>
Claystone		18.20	cv, ev
Shale		1.35	cm, em
Sandstone		56.40	cs, es
<b>Bone, coal stks, Waynesburg "A"</b>		<b>0.94</b>	<b>ac, cv, ev</b>
Shale		1.41	cm, em
Limestone		1.00	ak, cs, es
Shale		19.60	cm, em
Sandstone		2.00	cs, es
Shale		9.25	cm, em
Limestone		0.80	ak, cs, es
Shale		8.05	cm, em
Limestone		1.15	ak, cs, es
Claystone		5.50	cv, ev
Shale		4.55	cm, em
Sandstone		13.40	cs, es
Shale		2.50	cm, em
<b>Bone, coal layers, Waynesburg No. 11</b>		<b>0.35</b>	<b>ac, cv, ev</b>
Shale		3.10	cm, em
Limestone		0.80	ak, cs, es
Claystone		7.50	cv, ev
Limestone		4.05	ak, cs, es
Claystone		1.65	cv, ev
Limestone		2.95	ak, cs, es
Claystone		6.25	cv, ev
Limestone		2.05	ak, cs, es
Claystone		8.65	cv, ev
Shale		16.20	cm, em
Limestone		18.65	ak, cs, es

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCE MANAGEMENT**

**DRILLING REPORT - UNDERGROUND**

Applicant's Name: American Energy Corporation

Drill Hole #

AEC-2001-26

State Plane Coordinates: X: 2380612.76  
(NAD 1983 Ohio South)

Y: 678398.17

Surface Elevation:

1230.00

Lithology	H <sub>2</sub> O*	Thickness	Physical Properties
Shale		4.90	cm, em
Limestone		1.05	ak, cs, es
Shale		4.10	cm, em
Limestone		4.65	ak, cs, es
Claystone		3.50	cv, ev
Limestone		30.35	ak, cs, es
Shale		2.60	cm, em
Limestone		10.50	ak, cs, es
Shale		4.47	cm, em
<b>Coal, Sewickley No. 9</b>		<b>3.20</b>	<b>ac, cv, ev</b>
Shale		4.73	cm, em
Sandstone		15.80	cs, es
Shale		1.95	cm, em
<b>Coal, Fishpot</b>		<b>2.50</b>	<b>ac, cv, ev</b>
Shale		0.89	cm, em
Limestone		15.70	ak, cs, es
Claystone		9.75	cv, ev
Limestone		6.70	ak, cs, es
Claystone		1.75	cv, ev
Shale		3.85	cm, em
Limestone		1.45	ak, cs, es
Shale		2.25	cm, em
Limestone		10.03	ak, cs, es
Claystone		5.45	cv, ev
Limestone		0.85	ak, cs, es
Claystone		5.66	cv, ev
<b>Coal, bone layers, Pittsburgh No. 8 Roof Coal</b>		<b>0.43</b>	<b>ac, cv, ev</b>
Shale		1.01	cm, em
<b>Coal, Pittsburgh No. 8</b>		<b>5.32</b>	<b>ac, cv, ev</b>
Shale		2.00	cm, em
Claystone		6.02	cv, ev
Shale		2.10	cm, em

Submit the following information for the stratum above the coal seam, the coal seam, and the stratum below the coal seam.

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCE MANAGEMENT**

**DRILLING REPORT - UNDERGROUND**

Applicant's Name: American Energy Corporation

Drill Hole # AEC-2001-26

State Plane Coordinates: X: 2380612.76  
(NAD 1983 Ohio South)

Y: 678398.17

Surface Elevation: 1230.00

Stratum	Total Sulfur %	Pyrite Sulfur %	Potential Acidity Mg/l as CaCO <sub>3</sub>	Neutralization Potential (1000 Tons)	CaCO <sub>3</sub> Deficiency (1000 Tons)
Pittsburgh No. 8 Roof	2.62	2.33	81.82	78.60	3.34
Pittsburgh No. 8 Coal	5.60	3.26	175.00	4.11	171.00
Pittsburgh No. 8 Floor	2.15	1.82	67.19	302.50	-235.31

\* Indicating waterbearing stratum with an asterisk (\*) under column labeled H<sub>2</sub>O

Physical Properties Key
Acid Producing: ac
Alkaline Producing: ak
Compactible: c (v-very, m-moderate, s-slight)
Erodible: e (v-very, m-moderate, s-slight)

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCE MANAGEMENT**

**DRILLING REPORT - UNDERGROUND**

Applicant's Name: The American Energy Corporation

Drill Hole # AEC-2001-10

State Plane Coordinates: X: 2385859.70  
(NAD 1983 Ohio South)

Y: 678042.97

Surface Elevation:

1266.50

Lithology	H <sub>2</sub> O*	Thickness	Physical Properties
Casing		67.00	
Claystone	*	13.00	cv, ev
Shale	*	12.80	cm, em
Claystone		17.90	cv, ev
Shale		8.00	cm, em
Claystone		17.70	cv, ev
Shale		2.30	cm, em
Claystone		14.90	cv, ev
Shale		10.10	cm, em
Sandstone		38.00	cs, es
Claystone		13.30	cv, ev
Sandstone		88.90	cs, es
Claystone		1.60	cv, ev
Limestone		2.10	ak, cs, es
Shale		2.40	cm, em
Sandstone		4.60	cs, es
Shale		4.20	cm, em
Limestone		5.50	ak, cs, es
Shale		2.95	cm, em
<b>Coal, Waynesburg No. 11</b>		<b>0.65</b>	<b>ac, cv, ev</b>
Shale		7.30	cm, em
Sandstone		5.80	cs, es
Shale		0.90	cm, em
<b>Bone, Coal Layers, Little Waynesburg</b>		<b>0.30</b>	<b>ac, cv, ev</b>
Claystone		0.80	cv, ev
Limestone		27.00	ak, cs, es
Claystone		2.80	cv, ev
Sandstone		4.50	cs, es
Shale		4.60	cm, em
Limestone		1.00	ak, cs, es
Claystone		5.20	cv, ev
Shale		1.00	cm, em
Sandstone		7.90	cs, es
Claystone		10.50	cv, ev
Limestone		2.20	ak, cs, es
Claystone		1.00	cv, ev
Limestone		5.20	ak, cs, es
Shale		2.00	cm, em
Sandstone		3.80	cs, es
Limestone		32.60	ak, cs, es
Shale		3.30	cm, em
Limestone		22.80	ak, cs, es
Claystone		2.30	cv, ev
Shale		2.00	cm, em
<b>Coal, Sewickley No. 9</b>		<b>3.15</b>	<b>ac, cv, ev</b>
Claystone		1.45	cv, ev
Shale		2.50	cm, em
Claystone		1.90	cv, ev
Shale		12.20	cm, em

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCE MANAGEMENT**

**DRILLING REPORT - UNDERGROUND**

Applicant's Name: The American Energy Corporation

Drill Hole # AEC-2001-10

State Plane Coordinates: X: 2385859.70  
(NAD 1983 Ohio South)

Y: 678042.97

Surface Elevation: 1266.50

Lithology	H <sub>2</sub> O*	Thickness	Physical Properties
Coal, Fishpot		3.10	ac, cv, ev
Claystone		1.50	cv, ev
Limestone		14.30	ak, cs, es
Claystone		3.40	cv, ev
Sandstone		4.50	cs, es
Shale		7.00	cm, em
Limestone		2.80	ak, cs, es
Claystone		3.75	cv, ev
Coal, Redstone No 8A		0.65	ac, cv, ev
Limestone		16.30	ak, cs, es
Claystone		7.30	cv, ev
Shale		2.32	cm, em
Coal, Pittsburgh No 8 Roof Coal		0.28	ac, cv, ev
Shale		0.90	cm, em
Coal, Pittsburgh No. 8 Main Bench		5.20	ac, cv, ev
Shale		1.85	cm, em
Limestone		1.35	ak, cs, es
Claystone		5.90	cv, ev
Shale		0.50	cm, em
Sandstone		3.40	cs, es
Shale		0.80	cm, em
Sandstone		1.90	cs, es
Shale		1.70	cm, em
Sandstone		2.10	cs, es

Submit the following information for the stratum above the coal seam, the coal seam, and the stratum below the coal seam.

Stratum	Total Sulfur %	Pyrite Sulfur %	Potential Acidity Mg/l as CaCO <sub>3</sub>	Neutralization Potential (1000 Tons)	CaCO <sub>3</sub> Deficiency (1000 Tons)
Pittsburgh No. 8 Roof	1.60	1.51	50.10	158.20	-108.10
Pittsburgh No. 8 Coal	5.24	2.61	165.00	4.35	160.65
Pittsburgh No. 8 Floor	2.28	2.01	71.10	188.60	-117.50

\* Indicating waterbearing stratum with an asterisk (\*) under column labeled H<sub>2</sub>O

Physical Properties Key
Acid Producing: ac
Alkaline Producing: ak
Compactible: c (v-very, m-moderate, s-slight)
Erodible: e (v-very, m-moderate, s-slight)



**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCE MANAGEMENT**

**DRILLING REPORT - UNDERGROUND**

Applicant's Name: The American Energy Corporation

Drill Hole # AEC-2009-28

State Plane Coordinates: X: 2374396.36  
(NAD 1983 Ohio South)

Y: 678659.13

Surface Elevation:

1265.23

Lithology	H <sub>2</sub> O*	Thickness	Physical Properties
Casing		10.05	
Claystone	*	0.70	cv, ev
Sandstone	*	5.65	cs, es
Shale	*	38.15	cm, em
Sandstone	*	2.80	cs, es
Shale		7.00	cm, em
Sandstone	*	5.20	cs, es
Shale		38.65	cm, em
Limestone		1.75	ak, cs, es
Shale		20.30	cm, em
Sandstone		73.30	cs, es
<b>Coal with Shale Partings, Waynesburg "A"</b>		<b>0.35</b>	<b>ac, cv, ev</b>
Shale		50.50	cm, em
Sandstone		2.35	cs, es
Shale		7.77	cm, em
<b>Bone, Waynesburg No 11</b>		<b>0.23</b>	<b>ac, cv, ev</b>
Shale		2.55	cm, em
Limestone		2.90	ak, cs, es
Shale		2.20	cm, em
Limestone		9.95	ak, cs, es
Shale		3.75	cm, em
Claystone		2.50	cv, ev
Shale		34.10	cm, em
Limestone		7.65	ak, cs, es
Shale		12.20	cm, em
Limestone		3.25	ak, cs, es
Shale		2.70	cm, em
Limestone		4.20	ak, cs, es
Shale		8.65	cm, em
Limestone		25.90	ak, cs, es
Shale		12.10	cm, em
Sandstone		38.10	cs, es
Shale		4.28	cm, em
<b>Coal, Sewickley No 9</b>		<b>2.72</b>	<b>ac, cv, ev</b>
Limestone		15.00	ak, cs, es
Sandstone		3.85	cs, es
Shale		27.35	cm, em
Sandstone		33.35	cs, es
Shale		2.50	cm, em
Sandstone		4.50	cs, es
<b>Coal, Pittsburgh No 8 Roof Coal</b>		<b>0.20</b>	<b>ac, cv, ev</b>
Shale		1.10	cm, em
<b>Coal, Pittsburgh No 8 Main Bench</b>		<b>4.25</b>	<b>ac, cv, ev</b>
Shale		20.00	cm, em

Submit the following information for the stratum above the coal seam, the coal seam, and the stratum below the coal seam.

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCE MANAGEMENT**

**DRILLING REPORT - UNDERGROUND**

Applicant's Name: The American Energy Corporation

Drill Hole # AEC-2009-28

State Plane Coordinates: X: 2374396.36  
(NAD 1983 Ohio South)

Y: 678659.13

Surface Elevation: 1265.23

Stratum	Total Sulfur %	Pyrite Sulfur %	Potential Acidity Mg/l as CaCO <sub>3</sub>	Neutralization Potential (1000 Tons)	CaCO <sub>3</sub> Deficiency (1000 Tons)
Pittsburgh No. 8 Roof					
Pittsburgh No. 8 Coal					
Pittsburgh No. 8 Floor					

\* Indicating waterbearing stratum with an asterisk (\*) under column labeled H<sub>2</sub>O

Physical Properties Key
Acid Producing: ac
Alkaline Producing: ak
Compactible: c (v-very, m-moderate, s-slight)
Erodible: e (v-very, m-moderate, s-slight)

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCE MANAGEMENT**

**DRILLING REPORT - UNDERGROUND**

Applicant's Name: The American Energy Corporation

Drill Hole # AEC-2010-15

State Plane Coordinates: X: 2375865.11  
(NAD 1983 Ohio South)

Y: 678842.88

Surface Elevation:

1256.84

Lithology	H <sub>2</sub> O*	Thickness	Physical Properties
Casing		15.00	
Shale	*	0.60	cm, em
Sandstone	*	5.75	cs, es
Shale	*	2.00	cm, em
Claystone		7.30	cv, ev
Shale		20.40	cm, em
Claystone		2.70	cv, ev
Shale		1.70	cm, em
Sandstone		2.40	cs, es
Shale		6.90	cm, em
Sandstone		2.20	cs, es
Shale		4.40	cm, em
Sandstone		4.85	cs, es
Shale		14.70	cm, em
Claystone		4.80	cv, ev
Shale		15.90	cm, em
Claystone		2.50	cv, ev
Shale		1.90	cm, em
Limestone		1.10	ak, cs, es
Shale		3.15	cm, em
Claystone		6.35	cv, ev
<b>Coal, Washington No 12</b>		<b>1.00</b>	<b>ac, cv, ev</b>
Shale		9.40	cm, em
Sandstone		7.90	cs, es
Shale		3.90	cm, em
Sandstone		57.55	cs, es
<b>Coal, Waynesburg "A"</b>		<b>0.55</b>	<b>ac, cv, ev</b>
Shale		1.85	cm, em
Limestone		3.40	ak, cs, es
Shale		27.60	cm, em
Limestone		1.00	ak, cs, es
Shale		11.70	cm, em
Sandstone		8.90	cs, es
Shale		2.85	cm, em
<b>Coal, Waynesburg No 11</b>		<b>0.20</b>	<b>ac, cv, ev</b>
Shale		5.60	cm, em
Limestone		12.55	ak, cs, es
Shale		4.25	cm, em
Claystone		1.30	cv, ev
Shale		24.50	cm, em
Shale		2.30	cs, es
Shale		5.15	cm, em
Limestone		3.80	ak, cs, es
Shale		11.85	cm, em
Limestone		2.80	ak, cs, es
Shale		5.55	cm, em
Limestone		7.25	ak, cs, es
Shale		4.20	cm, em
Limestone		29.65	ak, cs, es
Shale		17.85	cm, em
Sandstone		35.25	cs, es
Shale		2.10	cm, em
<b>Coal with Shale Partings, Sewickley No 9</b>		<b>2.40</b>	<b>ac, cv, ev</b>

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCE MANAGEMENT**

**DRILLING REPORT - UNDERGROUND**

Applicant's Name: The American Energy Corporation

Drill Hole # AEC-2010-15

State Plane Coordinates: X: 2375865.11  
(NAD 1983 Ohio South)

Y: 678842.88

Surface Elevation: 1256.84

Lithology	H <sub>2</sub> O*	Thickness	Physical Properties
Limestone		14.25	ak, cs, es
Shale		3.35	cm, em
Claystone		1.90	cv, ev
Shale		20.95	cm, em
Sandstone		44.35	cs, es
Shale		14.35	cm, em
Coal with Shale Partings, Pittsburgh No 8 Roof Coal		0.25	ac, cv, ev
Shale		1.85	cm, em
Coal with Shale Partings, Pittsburgh No 8		0.80	ac, cv, ev
Shale		20.80	cm, em

Submit the following information for the stratum above the coal seam, the coal seam, and the stratum below the coal seam.

Stratum	Total Sulfur %	Pyrite Sulfur %	Potential Acidity Mg/l as CaCO <sub>3</sub>	Neutralization Potential (1000 Tons)	CaCO <sub>3</sub> Deficiency (1000 Tons)
Pittsburgh No. 8 Roof	1.78	1.77	55.60	30.45	25.15
Pittsburgh No. 8 Coal	6.22	5.32	194.00	11.20	183.00
Pittsburgh No. 8 Floor	2.19	2.13	68.30	285.00	-216.57

\* Indicating waterbearing stratum with an asterisk (\*) under column labeled H<sub>2</sub>O

Physical Properties Key
Acid Producing: ac
Alkaline Producing: ak
Compactible: c (v-very, m-moderate, s-slight)
Erodible: e (v-very, m-moderate, s-slight)

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCE MANAGEMENT**

**DRILLING REPORT - UNDERGROUND**

Applicant's Name: The American Energy Corporation

Drill Hole # CLC-2002-42

State Plane Coordinates: X: 2383947.84 Y: 677870.35  
(NAD 1983 Ohio South)

Surface Elevation: 1260.00

Lithology	H <sub>2</sub> O*	Thickness	Physical Properties
Casing		17.10	
Claystone		3.90	cv, ev
Limestone		1.10	ak, cs, es
Shale		4.91	cm, em
Coal		0.81	ac, cv, ev
Shale		29.78	cm, em
Claystone		1.80	cv, ev
Shale		19.40	cm, em
Claystone		2.65	cv, ev
Shale		101.31	cm, em
Coal, Washington No 12		0.92	ac, cv, ev
Shale		30.77	cm, em
Sandstone		44.19	cs, es
Coal, Waynesburg "A"		0.81	ac, cv, ev
Shale		28.75	cm, em
Sandstone		2.00	cs, es
Shale		6.05	cm, em
Limestone		2.35	ak, cs, es
Shale		9.00	cm, em
Sandstone		18.40	cs, es
Shale		1.79	cm, em
Coal, Waynesburg No 11		0.26	ac, cv, ev
Shale		8.55	cm, em
Limestone		6.40	ak, cs, es
Shale		2.50	cm, em
Limestone		2.20	ak, cs, es
Shale		6.50	cm, em
Limestone		2.75	ak, cs, es
Shale		25.70	cm, em
Limestone		11.70	ak, cs, es
Shale		6.05	cm, em
Claystone		2.20	cv, ev
Sandstone		2.70	cs, es
Shale		5.45	cm, em
Limestone		2.65	ak, cs, es
Shale		2.30	cm, em
Sandstone		3.85	cs, es
Shale		5.80	cm, em
Limestone		3.30	ak, cs, es
Shale		2.95	cm, em
Limestone		7.85	ak, cs, es
Shale		4.25	cm, em
Limestone		14.80	ak, cs, es
Claystone		7.10	cv, ev
Limestone		1.15	ak, cs, es
Shale		2.15	cm, em
Claystone		2.89	cv, ev
Coal, Sewickley No 9 Coal		2.68	ac, cv, ev
Shale		16.48	cm, em

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCE MANAGEMENT**

**DRILLING REPORT - UNDERGROUND**

Applicant's Name: The American Energy Corporation

Drill Hole # CLC-2002-42

State Plane Coordinates: X: 2383947.84  
(NAD 1983 Ohio South)

Y: 677870.35

Surface Elevation: 1260.00

Lithology	H <sub>2</sub> O*	Thickness	Physical Properties
Claystone		2.77	cv, ev
<b>Bone, Fishpot Coal</b>		<b>3.16</b>	<b>ac, cv, ev</b>
Limestone		16.22	ak, cs, es
Claystone		1.20	cv, ev
Shale		14.20	cm, em
Limestone		2.30	ak, cs, es
Claystone		2.70	cv, ev
Shale		7.55	cm, em
Limestone		17.65	ak, cs, es
Claystone		2.50	cv, ev
Shale		1.86	cm, em
<b>Coal, Pittsburgh No 8 Roof Coal</b>		<b>0.55</b>	<b>ac, cv, ev</b>
Shale		0.90	cm, em
<b>Coal, Pittsburgh No 8 Main Bench</b>		<b>5.00</b>	<b>ac, cv, ev</b>
Shale		8.44	cm, em
Sandstone		1.99	cs, es

Submit the following information for the stratum above the coal seam, the coal seam, and the stratum below the coal seam.

Stratum	Total Sulfur %	Pyrite Sulfur %	Potential Acidity Mg/l as CaCO <sub>3</sub>	Neutralization Potential (1000 Tons)	CaCO <sub>3</sub> Deficiency (1000 Tons)
Pittsburgh No. 8 Roof					
Pittsburgh No. 8 Coal					
Pittsburgh No. 8 Floor					

\* Indicating waterbearing stratum with an asterisk (\*) under column labeled H<sub>2</sub>O

Physical Properties Key
Acid Producing: ac
Alkaline Producing: ak
Compactible: c (v-very, m-moderate, s-slight)
Erodible: e (v-very, m-moderate, s-slight)

ADDENDUM TO PART 2, ITEM B(3)  
AMERICAN ENERGY CORPORATION  
CENTURY MINE  
PERMIT D-0425-15

Monroe County/Beallsville Mining Area

Based on geologic analysis of drill holes and in-mine observations of this area, thin coal anomalies appear to be limited to small scale isolated areas. As the long wall gates advance to the west, geologic conditions, including coal thickness will be continuously monitored and evaluated. If and when thin coal areas are encountered during long wall gate advancement, decisions regarding further advancement vs. gate and longwall panel development stoppage will be made at that time.

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**GROUND WATER DESCRIPTION**

Applicant's Name **American Energy Corporation** D-0425-15

Aquifer/Zone Identification	Aquifer/Zone Lithology	Aquifer/Zone Thickness	Aquifer/Zone Elev. (msl)	Aquifer/Zone Horizontal Extent	Aquifer/Zone Known Uses	Approximate Rate of Discharge of Aquifer/Zone (gpm or cps)
<b>A</b>	Shale, Limestone, Sandstone	130'	1130 - 1260'	Mid Ridge to Ridge Top	Domestic, Agricultural	<1 gpm
<b>B</b>	#12 Coal and Shale	60'	1070 - 1150'	Ridge Base to Mid-Ridge	Domestic, Agricultural	Up to 18.8 gpm
<b>C</b>	#11 Coal, Shale, Sandstone	110'	960 - 1090'	Regional to Ridge Base	Domestic, Agricultural	Up to 6.25 gpm
<b>D</b>	#10 Coal, Shale, Limestone	50'	910 - 980'	Regional to Ridge Base	Domestic, Agricultural	Unknown
<b>E</b>	#9 Coal, Shale, Limestone	110'	800 - 930'	Regional	Domestic, Agricultural	Up to 3.5 gpm
<b>F</b>	#8 Coal, Shale, Limestone	100'	700 - 820'	Regional	Domestic, Agricultural	<1 gpm

Part 2: Section C



**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**GROUND WATER DESCRIPTION**

**Applicant's Name** American Energy Corporation **D-0425-15 (Belmont County Mining Area)**

Aquifer/Zone Identification	Aquifer/Zone Lithology	Aquifer/Zone Thickness	Aquifer/Zone Elev. (msl)	Aquifer/Zone Horizontal Extent	Aquifer/Zone Known Uses	Approximate Rate of Discharge of Aquifer/Zone (gpm or cps)
<b>A</b>	Shale, Limestone, Sandstone	150'	1080 - 1260	Mid Ridge to Ridge Top	Domestic, Agricultural	<1 gpm
<b>B</b>	#12 Coal and Shale	60'	1020 - 1110	Ridge Base to Mid-Ridge	Domestic, Agricultural	Up to 18.8 gpm
<b>C</b>	#11 Coal, Shale, Sandstone	110'	910 - 1050	Regional to Ridge Base	Domestic, Agricultural	Up to 6.25 gpm
<b>D</b>	#10 Coal, Shale, Limestone	50'	860 - 940	Regional to Ridge Base	Domestic, Agricultural	Unknown
<b>E</b>	#9 Coal, Shale, Limestone	110'	750 - 890	Regional	Domestic, Agricultural	Up to 3.5 gpm
<b>F</b>	#8 Coal, Shale, Limestone	100'	650 - 780	Regional	Domestic, Agricultural	<1 gpm

**Part 2: Section C**

American Energy Corp.  
Century Mine  
D-0425-15  
Addendum to Part 2, C(2) Ground Water Inventory

The ground water sites listed below could not be sampled and/or measured for the following reasons:

- DW-76.00 No access to well under the porch-crawl space and therefore depth and static water levels were unobtainable. Well is unused as jet pump is inoperable and no sample was obtainable. Residence is on public water.
- DW-96.00 Hand pump bolted to concrete therefore no access for depth and static water levels. Well could be alternative domestic source but only operable by hand pump which is how it was sampled. Residence is on public water.
- DW-106.00 No access to well under the back porch and therefore depth and static water levels were unobtainable. Well is unused and no sample was obtainable. Residence is on public water.
- DW-116.00 No access to well under the house crawl space and therefore depth and static water levels were unobtainable. Well is unused and no sample was obtainable. Residence is on public water.
- W-29.02 Well head locked therefore depth and static water levels were unobtainable. Well sampled from house and is primary domestic use. Public water is available at the property road frontage but not run to the house.
- W-31.00 Well is buried therefore depth and static water levels were unobtainable. Could not sample/measure. Well not used. Residence is on public water.
- W-35.00 Well is buried in the garage therefore depth and static water levels were unobtainable. Well was sampled and is a primary domestic source.
- W-71.00 Well sealed in pit therefore depth and static water levels were unobtainable. Sampled in basement and is a back-up source. Residence is on public water.
- W-71.01 Well has hand pump bolted down and is inoperable therefore depth and static water levels were unobtainable. Well is unused and no sample was obtainable. Same residence as W-71.00 with public water.

- W-72.00 Well is buried and pump is inoperable therefore depth and static water levels were unobtainable. Well is unused and no sample was obtainable. Residence is on public water.
- W-77.00 Unused. Residence is on public water.
- W-77.01 Unused. Residence is on public water.
- WL-79.00 Well is sealed therefore depth and static water levels were unobtainable. Well is unused and no sample was obtainable. Residence is on public water.
- W-87.00 Well is buried therefore depth and static water levels were unobtainable. Pump is operable and well was sampled from house. Residence is on public water.
- W-88.00 Well is buried on west side of house and pump is inoperable therefore depth and static water levels were unobtainable. Well is unused and no sample was obtainable. Residence is on public water.
- WL-91.00 Well is buried and sealed in yard. Sampled from hose bib. Available as back-up water supply used for gardening. Residence is on public water.
- W-92.00 Well is buried and sealed under the southeast corner of the house, therefore depth and static water levels were unobtainable. Well is unused and no sample was obtainable. Residence is on public water.
- W-94.00 Well was filled in since the 2008 sampling during house remodeling and therefore depth and static water levels and a sample were unobtainable in the 2010 sampling. Residence is on public water.
- W-106.01 Well is located under porch and not accessible therefore depth and static water levels were unobtainable. Well is unused and no sample was obtainable. Residence is on public water.
- W-117.00 Well pump is presently inoperable but may be replaced. Sample bailed. Residence is on public water for primary water source.
- W-123.00 Well is buried and sealed in yard therefore depth and static water levels were unobtainable but well was sampled from house. Well is primary domestic supply. Public water is available to the lot.
- W-128.00 Pump inoperable therefore depth and static water levels and a sample were unobtainable. Well is unused and no sample was obtainable.

American Energy Corp.  
Century Mine  
D-0425-15  
Addendum to Part 2, C(2) Ground Water Inventory

Residence is on public water.

- W-140.00      Hand Pump inoperable. Depths measured by probes and sample was bailed. Well is unused as building is on public water.
- W-181A        Well is buried and sealed in yard. Owner is not sure of exact location. Therefore depth and static water levels were unobtainable. The well piping goes through the house basement and then back to the barn for agricultural use. It was available for sampling. Residence is on public water.
- W-594          Well is buried and disconnected, therefore depth and static water levels were unobtainable. Well is unused and no sample was obtainable. Residence is on public water.
- W-595          Well was able to be measured for a SWL by probe but was unable to be bailed for a sample in 2010. This well is unused. Additional analyses from D-0425-3 in 2002/03 now included.

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

GROUND WATER INVENTORY

Applicant's Name: American Energy Corporation

Beallsville

D-0425-15 Pg1

ID No. Of Sampling Site from Hydrology Map	State Plane X-Y Coordinates	Surface Elevation (ft msl)	Depth of Well Below Land Surface (feet)*	SWL of Well Below Land Surface (ft)*	Discharge for Spring, Under- ground Mine, etc. (gpm or cfs)*	Date Measured	Aquifer/ Water- bearing Zone ID*	Known Uses, including public water	Name of Owner
DS-27.02	X 2,374,882 Y 677,758	1190'	--	--	--	8/08, 5/10, 6/10	A	AU	S Mellot
DS-29.00	X 2,375,585 Y 679,886	1200'	--	--	--	8/08, 12/08, 2/09	A	AU	Ida Campbell
DS-29.04	X 2,375,410 Y 678,147	1220'	--	--	--	8/08, 5/10, 6/10	A	AU	Ida Campbell
DS-29.10	X 2,375,587 Y 677,754	1220'	--	--	--	5/10, 6/10, 8/10	A	AU	Ida Campbell
DS-34.00	X 2,381,776 Y 678,881	1200'	--	--	--	8/08, 5/10, 6/10	A	+LD	William Reed
DS-34.02	X 2,381,078 Y 679,017	1200'	--	--	--	8/08, 5/10, 6/10	A	+AU	William Reed
DS-34.04	X 2,381,350 Y 679,910	1200'	--	--	--	8/08, 12/08, 2/09	A	+AU	William Reed
DS-34.06	X 2,379,959 Y 679,976	1198'	--	--	--	8/08, 7/09, 2/10	A	+AU	William Reed
DS-34.08	X 2,380,230 Y 679,266	1193'	--	--	--	8/08, 12/08, 2/09	A	+AU	William Reed
DS-34.09	X 2,379,341 Y 679,486	1120'	--	--	--	8/08, 7/09, 2/10	A	+AU	William Reed

\*NOTE: If well depth, static water level, or aquifer/water-bearing zone information is unobtainable, submit as an addendum to **GROUND WATER INVENTORY** a statement giving the reasons why the information is unobtainable. Do not include SWL and discharge values if they are reported on the Hydrologic Analyses.  
Footnote: +Used supply likely to be impacted by mining induced subsidence.

05/08 DNR-744-9083

AEC 09670

GROUND WATER INVENTORY

Applicant's Name: American Energy Corporation

Beallsville

D-0425-15 Pg2

ID No. Of Sampling Site from Hydrology Map	State Plane X-Y Coordinates	Surface Elevation (ft msl)	Depth of Well Below Land Surface (feet)*	SWL of Well Below Land Surface (ft)*	Discharge for Spring, Under- ground Mine, etc. (gpm or cfs)*	Date Measured	Aquifer/ Water- bearing Zone ID*	Known Uses, including public water	Name of Owner
DS-34.10	X 2,379,421 Y 679,564	1125'	--	--	--	8/08, 7/09, 2/10	A	+AU	William Reed
DS-34.14	X 2,378,740 Y 679,530	1140'	--	--	--	8/08, 7/09, 2/10	A	+AU	William Reed
DS-34.15	X 2,379,057 Y 679,231	1180'	--	--	--	8/08, 7/09, 2/10	A	+AU	William Reed
DS-34.16	X 2,379,196 Y 679,158	1160'	--	--	--	8/08, 5/10, 6/10	A	None	William Reed
DS-34.17	X 2,379,934 Y 679,178	1140'	--	--	--	8/08, 5/10, 6/10	A	None	William Reed
DS-34.18	X 2,379,829 Y 678,912	1160'	--	--	--	8/08, 5/10, 6/10	A	+Non- potable DU	William Reed
DS-34.19	X 2,380,406 Y 678,945	1220'	--	--	--	8/08, 12/08, 2/09	A	+AU	William Reed
DS-117.01	X 2,378,717 Y 677,690	1180'	--	--	--	8/08, 5/10, 6/10	A	None	E & G Saffield
DS-117.02	X 2,378,485 Y 677,776	1180'	--	--	--	8/08, 5/10, 6/10	A	None	E & G Saffield
DS-118.01	X 2,378,918 Y 678,221	1180'	--	--	--	8/08, 5/10, 6/10	A	None	Dale Caldwell

\*NOTE: If well depth, static water level, or aquifer/water-bearing zone information is unobtainable, submit as an addendum to **GROUND WATER INVENTORY** a statement giving the reasons why the information is unobtainable. Do not include SWL and discharge values if they are reported on the Hydrologic Analyses.  
05/08 DNR-744-9083

Footnote: +Used supply likely to be impacted by mining induced subsidence.

# GROUND WATER INVENTORY

D-0425-15 Pg3

[illegible]

**\*NOTE:** If well depth, static water level, or aquifer/water-bearing zone information is unobtainable, submit as an addendum to **GROUND WATER INVENTORY** a statement giving the reasons why the information is unobtainable. Do not include SWL and discharge values if they are reported on the Hydrologic Analyses.

**Footnote: +Used supply likely to be impacted by mining induced subsidence.**

05/08 DNR-744-9083

05/08 DNR-744-9083

AEC 09672

GROUND WATER INVENTORY

Applicant's Name: American Energy Corporation Beallsville D-0425-15 Pg 4

ID No. Of Sampling Site from Hydrology Map	State Plane X-Y Coordinates	Surface Elevation (ft msl)	Depth of Well Below Land Surface (feet)*	SWL of Well Below Land Surface (ft)*	Discharge for Spring, Under- ground Mine, etc. (gpm or cfs)*	Date Measured	Aquifer/ Water- bearing Zone ID*	Known Uses, including public water	Name of Owner
DW-76.00	X 2,380,765 Y 677,975	1245'	Z	Z	--	8/08, 5/10, 6/10	Unknown	Unused	Jenny & Terry Ricer
DW-76.01	X 2,380,928 Y 678,083	1245'	18.5'	5.4'	--	8/08, 5/10, 6/10	A	Unused	Jenny & Terry Ricer
DW-95.00	X 2,380,193 Y 678,059	1253'	21.5'	13.8'	--	8/08, 5/10, 6/10	A	Unused	Steve Susac
DW-96.00	X 2,380,260 Y 678,036	1255'	WW	WW	--	8/08, 5/10, 6/10	Unknown	LD	Steve Susac
DW-106.00	X 2,379,388 Y 677,545	1255'	100'V	30'V	--	8/08, 5/10, 6/10	A	Unused	Robin Stonebreaker
DW-108.00	X 2,380,128 Y 677,700	1235'	33.5'	5.6'	--	8/08, 5/10, 6/10	A	LD	Board of Trustees
DW-113.00	X 2,379,753 Y 677,607	1265'	21.5'	16.0'	--	8/08, 5/10	A	Unused	Ray A. Baker
DW-116.00	X 2,379,450 Y 677,544	1255'	Z	Z	--	8/08, 6/10	Unknown	Unused	Robert & Kathleen Caldwell
DW-118.00	X 2,379,156 Y 678,513	1243'	17'	11.6'	--	9/08, 12/08, 2/09	A	+LD	D Caldwell

\*NOTE: If well depth, static water level, or aquifer/water-bearing zone information is unobtainable, submit as an addendum to **GROUND WATER INVENTORY** a statement giving the reasons why the information is unobtainable. Do not include SWL and discharge values if they are reported on the Hydrologic Analyses.  
05/08 DNR-744-9083  
Footnote: +Used supply likely to be impacted by mining induced subsidence.



GROUND WATER INVENTORY

Applicant's Name: American Energy Corporation

Beallsville

D-0425-15 Pg 5

ID No. Of Sampling Site from Hydrology Map	State Plane X-Y Coordinates	Surface Elevation (ft msl)	Depth of Well Below Land Surface (feet)*	SWL of Well Below Land Surface (ft)*	Discharge for Spring, Under- ground Mine, etc. (gpm or cfs)*	Date Measured	Aquifer/ Water- bearing Zone ID*	Known Uses, including public water	Name of Owner
W-29.02	X 2,375,641 Y 678,715	1260'	YY	23'	--	8/08, 12/08, 2/09	A	+DU	I Campbell
W-31.00	X 2,375,925 Y 678,300	1260'	Z	Z	--	8/08,	Unknown	Unused	G & C Crum
W-35.00	X 2,378,200 Y 679,576	1120'	Z	Z	--	8/08, 7/09, 2/10	Unknown	+DU	J Palmer Jr
W-71.00	X 2,379,512 Y 678,528	1255'	Z ***	Z ***	--	8/08, 5/10, 6/10	Unknown	+DUB	J Ogilbee
W-71.01	X 2,379,414 Y 678,512	1255'	X	X	--	8/08, 5/10, 6/10	Unknown	Unused	J Ogilbee
W-72.00	X 2,381,041 Y 678,602	1250'	ZZ	ZZ	--	8/08, 5/10, 6/10	Unknown	Unused	D & R Boughner
W-77.00	X 2,380,310 Y 677,711	1240'	N	12.6'	--	9/08, 5/10, 6/10	A	Unused	Mike Datkuliak
W-77.01	X 2,380,305 Y 677,876	1260'	N	23.6'	--	8/08, 5/10, 6/10	A	Unused	Mike Datkuliak
WL-79.00	X 2,383,175 Y 678,895	1250'	85'T	36'T	--	8/08, 5/10, 6/10	A	Unused	G Hoover Jr.

\*NOTE: If well depth, static water level, or aquifer/water-bearing zone information is unobtainable, submit as an addendum to **GROUND WATER INVENTORY** a statement giving the reasons why the information is unobtainable. Do not include SWL and discharge values if they are reported on the Hydrologic Analyses.  
05/08 DNR-744-9083  
Footnote: +Used supply likely to be impacted by mining induced subsidence.

GROUND WATER INVENTORY

Applicant's Name: American Energy Corporation

Beallsville

D-0425-15

Pg 6

ID No. Of Sampling Site from Hydrology Map	State Plane X-Y Coordinates	Surface Elevation (ft msl)	Depth of Well Below Land Surface (feet)*	SWL of Well Below Land Surface (ft)*	Discharge for Spring, Under- ground Mine, etc. (gpm or cfs)*	Date Measured	Aquifer/ Water- bearing Zone ID*	Known Uses, including public water	Name of Owner
W-80.00	X 2,382,600 Y 677,960	1243'	53.5'	19.4'	-	8/08, 5/10, 6/10	A	LD	George & Pamela Hoover
W-80.01	X 2,382,811 Y 677,899	1250'	65.5'	20.3'	-	8/08, 5/10, 6/10	A	AU	George & Pamela Hoover
W-87.00	X 2,379,718 Y 678,461	1265'	Z	Z	-	9/08, 5/10, 6/10	Unknown	+DUB	M. Dillon
W-88.00	X 2,379,831 Y 678,456	1240'	Z	Z	-	8/08, 5/10, 6/10	Unknown	Unused	G N Hamilton
WL-91.00	X 2,380,715 Y 678,387	1245'	65'T	30'T	-	8/08, 5/10, 6/10	A	+LD	P & R Lucas
W-92.00	X 2,380,569 Y 678,005	1235'	Z	Z	-	8/08, 5/10, 6/10	Unknown	Unused	Walter & B. Dornon
W-94.00	X 2,380,350 Y 678,045	1250'	79'	18.2'	-	8/08, 5/10, 6/10	A	Unused	Sharon Shriver
W-106.01	X 2,379,379 Y 677,572	1252'	90'V	N	-	8/08, 5/10, 6/10	A	Unused	Robin Stonebreaker
W-117.00	X 2,378,984 Y 677,469	1260'	57'	37.4'	-	8/08, 5/10, 6/10	A	DUB	E & G Saffield
W-123.00	X 2,379,295 Y 677,389	1260'	Z	Z	-	8/08, 5/10, 6/10	Unknown	DU	Gerald & Nellie Crum

\*NOTE: If well depth, static water level, or aquifer/water-bearing zone information is unobtainable, submit as an addendum to **GROUND WATER INVENTORY** a statement giving the reasons why the information is unobtainable. Do not include SWL and discharge values if they are reported on the Hydrologic Analyses.  
Footnote: +Used supply likely to be impacted by mining induced subsidence.  
05/08 DNR-744-9083

GROUND WATER INVENTORY

Applicant's Name: American Energy Corporation

Beallsville

D-0425-15

Pg 7

ID No. Of Sampling Site from Hydrology Map	State Plane X-Y Coordinates	Surface Elevation (ft msl)	Depth of Well Below Land Surface (feet)*	SWL of Well Below Land Surface (ft)*	Discharge for Spring, Under- ground Mine, etc. (gpm or cfs)*	Date Measured	Aquifer/ Water- bearing Zone ID*	Known Uses, including public water	Name of Owner
W-128.00	X 2,379,623 Y 677,404	1260'	Q	Q	-	8/08, 5/10, 6/10	Unknown	Unused	D Dyer
W-140.00	X 2,379,179 Y 677,471	1220'	40'	23.7'	-	5/10, 6/10, 8/10	A	Unused	Village of Beallsville
W-181A	X 2,384,006 Y 679,237	1260'	85'	Sealed	-	10/01, 2/02, 2/10	B	+AU Barn	R Brooks
W-594	X 2,383,693 Y 678,167	1268'	ZZZ	ZZZ	-	2/10, 5/10, 8/10	Unknown	Unused	T & J Reed
W-595	X 2,383,864 Y 678,146	1250'	21.5'	7.5'	-	2/10, 5/10, 8/10	Unknown	Unused	T & J Reed

\*NOTE: If well depth, static water level, or aquifer/water-bearing zone information is unobtainable, submit as an addendum to **GROUND WATER INVENTORY** a statement giving the reasons why the information is unobtainable. Do not include SWL and discharge values if they are reported on the Hydrologic Analyses.  
05/08 DNR-744-9083

Footnote: +Used supply likely to be impacted by mining induced subsidence.

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-1

1	ID No. Of Sampling Site From Hydrology Map				DS-29.00		
2	Lab ID No.				0808295	0901002	0902286
3	Date Measured/Sampled				08-08-08	12-31-08	02/12/09
4	High (H), Low (L), Intermediate (I) (if applicable)				T for L	I	T for H
5	Date Last Precipitation Event (if applicable)				08-04-08	12-26-08	02/12/09
6	Static Water Level of Well below Land Surface (feet)*				--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)				0.40 gpm	0.54 gpm	0.93 gpm
8	pH (Standard Units)				7.80	7.70	7.89
9	Total Acidity (mg/l CaCO <sub>3</sub> )				2.6	<5	5.6
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )				240	160	200
11	Total Iron (mg/l)				<0.02	0.1	<0.1
12	Total Manganese (mg/l)				<0.004	<0.1	<0.02
13	Total Aluminum (mg/l)				0.04	<0.5	<0.1
14	Total Suspended Solids (mg/l)				<6.7	<6.7	<6.7
15	Total Hardness (mg/l as CaCO <sub>3</sub> )				300	220	230
16	Total Sulfates (mg/l)				45.6	47	42
17	Specific Conductivity (umhos/cm at 25°C)**				754	515	553
18	Total Dissolved Solids (mg/l)**				--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

City: Triadelphia

State: WV

Zip: 26059

\* NOTE: If information required by item 6 is unobtainable, submit as an addendum to Hydrologic Analyses a statement giving the reasons why the information is unobtainable.

NOTE: For each sample provide data for either item 17 or item 18.

05/08

DNR-744-9024

AEC 09677

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-1

1	ID No. Of Sampling Site From Hydrology Map	DS-29.04			DS-29.10		
2	Lab ID No.	0808436	1006338	1005162	1008607	NS	1005163
3	Date Measured/Sampled	08-12-08	06-16-10	05/06/10	08/25/10	06-16-10	05/06/10
4	High (H), Low (L), Intermediate (I) (if applicable)	T for L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-04-08	06-14-10	05/04/10	08/22/10	06-14-10	05/04/10
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	0.71 gpm	0.94 cfs	0.80 gpm	0.09 gpm	--	0.13 gpm
8	pH (Standard Units)	7.74	7.00	7.74	7.7	--	7.51
9	Total Acidity (mg/l CaCO <sub>3</sub> )	5.2	21	10	8.2	--	4.4
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	210	190	170	140	--	110
11	Total Iron (mg/l)	0.027	0.46	1.2	0.71	--	0.20
12	Total Manganese (mg/l)	0.011	0.02	0.055	0.02	--	0.020
13	Total Aluminum (mg/l)	0.019	0.35	1.39	0.72	--	0.23
14	Total Suspended Solids (mg/l)	<6.7	28	61	30	--	16
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	335	299	361	181	--	170
16	Total Sulfates (mg/l)	31.4	37.6	39.9	18.2	--	18.8
17	Specific Conductivity (umhos/cm at 25°C)**	778	781	800	347	--	301
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

City: Triadelphia

State: WV

Zip: 26059

\* NOTE: If information required by item 6 is unobtainable, submit as an addendum to Hydrologic Analyses a statement giving the reasons why the information is unobtainable.

NOTE: For each sample provide data for either item 17 or item 18.

05/08  
DNR-744-9024

AEC 09678

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-1

1	ID No. Of Sampling Site From Hydrology Map	DS-34.00			DS-34.02		
2	Lab ID No.	0808306	1006417	1005074	0808307	1006416	1005073
3	Date Measured/Sampled	08-09-08	06/18/10	05/04/10	08-09-08	06/18/10	05/04/10
4	High (H), Low (L), Intermediate (I) (if applicable)	T for L	I	T for H	T for L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-04-08	06/16/10	05/04/10	08-04-08	06/16/10	05/04/10
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	0.22 gpm	0.53 gpm	0.47 gpm	0.06 gpm	0.18 gpm	0.25 gpm
8	pH (Standard Units)	8.00	7.01	7.70	7.90	7.24	7.66
9	Total Acidity (mg/l CaCO <sub>3</sub> )	0.72	4.6	11	3.3	2.8	8.9
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	94	73	93	170	210	190
11	Total Iron (mg/l)	<0.02	0.17	0.71	0.02	0.13	0.13
12	Total Manganese (mg/l)	<0.004	0.03	0.00	<0.004	0.02	0.00
13	Total Aluminum (mg/l)	<0.04	0.14	0.00	<0.04	0.13	0.16
14	Total Suspended Solids (mg/l)	<6.7	ND	0.00	15	ND	0.00
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	120	91	150	300	290	300
16	Total Sulfates (mg/l)	32.9	25.5	29.6	38.9	35.2	38.7
17	Specific Conductivity (umhos/cm at 25°C)**	337	200	280	720	605	612
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

City: Triadelphia

State: WV

Zip: 26059

\* NOTE: If information required by item 6 is unobtainable, submit as an addendum to Hydrologic Analyses a statement giving the reasons why the information is unobtainable.

\*\* NOTE: For each sample provide data for either item 17 or item 18.

05/08  
DNR-744-9024

AEC 09679

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	DS-34.04			DS-34.06		
2	Lab ID No.	0808308	1006477	0902219	0808309	0907312	N-02-098
3	Date Measured/Sampled	08-09-08	06/22/10	02/11/09	08/09/08	07/14/09	02/05/10
4	High (H), Low (L), Intermediate (I) (if applicable)	T for L	I	T for H	T for L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-04-08	06/16/10	02/11/09	08/04/08	07/02/09	02/05/10
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	0.34 gpm	0.31 gpm	2.14 gpm	0.11 gpm	0.17 gpm	0.40 gpm
8	pH (Standard Units)	8.00	7.62	6.29	6.70	6.72	--
9	Total Acidity (mg/l CaCO <sub>3</sub> )	2.6	ND	6.2	13	38	--
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	160	190	55	130	130	--
11	Total Iron (mg/l)	0.02	0.06	<0.1	<0.04	<0.1	--
12	Total Manganese (mg/l)	<0.004	ND	<0.02	<0.004	<0.02	--
13	Total Aluminum (mg/l)	<0.04	0.24	<0.1	<0.04	<0.1	--
14	Total Suspended Solids (mg/l)	<6.7	6.0	<6.7	<6.7	11	--
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	260	328	150	170	180	--
16	Total Sulfates (mg/l)	28.9	31.6	16	20.6	28	--
17	Specific Conductivity (umhos/cm at 25°C)**	756	714	235	400	347	--
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

City: Triadelphia

State: WV

Zip: 26059

\* NOTE: If information required by item 6 is unobtainable, submit as an addendum to Hydrologic Analyses a statement giving the reasons why the information is unobtainable.

\*\* NOTE: For each sample provide data for either item 17 or item 18.

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	DS-34.08			DS-34.09		
2	Lab ID No.	0808310	0812383	0902271	0808311	0907314	N-02-100
3	Date Measured/Sampled	08-09-08	12-23-08	02/12/09	08/09/08	07/14/09	02/05/10
4	High (H), Low (L), Intermediate (I) (if applicable)	T for L	I	T for H	T for L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-04-08	12-23-08	02/12/09	08/04/08	07/02/09	02/05/10
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	0.55 gpm	0.65 gpm	1.0 gpm	0.47 gpm	0.63 gpm	0.8 gpm
8	pH (Standard Units)	7.90	7.48	6.26	8.20	7.99	--
	Total Acidity (mg/l CaCO <sub>3</sub> )	6.0	49	18	<0.11	<5	--
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	49	47	51	160	200	--
11	Total Iron (mg/l)	0.03	0.1	<0.1	0.02	<0.1	--
12	Total Manganese (mg/l)	0.350	0.4	0.246	<0.004	<0.02	--
13	Total Aluminum (mg/l)	<0.04	<0.5	<0.1	<0.04	<0.1	--
14	Total Suspended Solids (mg/l)	<6.7	<6.7	<6.7	<10	<10	--
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	50	90	80	120	200	--
16	Total Sulfates (mg/l)	23.0	20	20	23.0	22	--
17	Specific Conductivity (umhos/cm at 25°C)**	210	182	185	452	441	--
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

City: Triadelphia

State: WV

Zip: 26059

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**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map				DS-34.10		
2	Lab ID No.				0808312	0907313	N-02-099
3	Date Measured/Sampled				08/09/08	07/14/09	02/05/10
4	High (H), Low (L), Intermediate (I) (if applicable)				T for L	I	T for H
5	Date Last Precipitation Event (if applicable)				08/04/08	07/02/09	02/05/10
6	Static Water Level of Well below Land Surface (feet)*				--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)				0.38	0.67 gpm	1.0 gpm
8	pH (Standard Units)				7.80	7.70	--
9	Total Acidity (mg/l CaCO <sub>3</sub> )				1.3	7.7	--
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )				160	210	--
11	Total Iron (mg/l)				0.05	<0.1	--
12	Total Manganese (mg/l)				<0.004	<0.02	--
13	Total Aluminum (mg/l)				<0.04	<0.1	--
14	Total Suspended Solids (mg/l)				<6.7	<10	
15	Total Hardness (mg/l as CaCO <sub>3</sub> )				140	200	--
16	Total Sulfates (mg/l)				23.0	15	--
17	Specific Conductivity (umhos/cm at 25°C)**				484	461	--
18	Total Dissolved Solids (mg/l)**				--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

City: Triadelphia

State: WV

Zip: 26059

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**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	DS-34.14			DS-34.15		
2	Lab ID No.	0808315	0907316	N-02-080	0808316	0907315	N-02-079
3	Date Measured/Sampled	08/09/08	07/14/09	02/05/10	08/09/08	07/14/09	02/05/10
4	High (H), Low (L), Intermediate (I) (if applicable)	T for L	I	T for H	T for L	I	H
5	Date Last Precipitation Event (if applicable)	08/04/08	07/02/09	02/05/10	08/04/08	07/02/09	02/05/10
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	0.19 gpm	0.27 gpm	0.34 gpm	0.16 gpm	0.19 gpm	0.3 gpm
8	pH (Standard Units)	8.00	7.46	--	7.40	7.49	--
9	Total Acidity (mg/l CaCO <sub>3</sub> )	4.2	11	--	8.0	11	--
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	180	190	--	160	160	--
11	Total Iron (mg/l)	0.05	<0.1	--	0.04	0.19	--
12	Total Manganese (mg/l)	<0.004	<0.02	--	<0.004	0.032	--
13	Total Aluminum (mg/l)	<0.04	0.1	--	0.04	0.1	--
14	Total Suspended Solids (mg/l)	<6.7	10	--	17	13	--
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	200	220	--	200	340	--
16	Total Sulfates (mg/l)	27.8	20	--	26.6	21	--
17	Specific Conductivity (umhos/cm at 25°C)**	508	428	--	517	428	--
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

City: Triadelphia

State: WV

Zip: 26059

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NOTE: For each sample provide data for either item 17 or item 18.

05/08 DNR-744-9024

AEC 09683

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	DS-34.16			DS-34.17		
2	Lab ID No.	0808317	1006519	1005071	0808318	1006518	1005069
3	Date Measured/Sampled	08-09-08	06/25/10	05/04/10	08-09-08	06/25/10	05/04/10
4	High (H), Low (L), Intermediate (I) (if applicable)	T for L	I	T for H	T for L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-04-08	06/24/10	05/04/10	08-04-08	06/24/10	05/04/10
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	0.07 gpm	0.05 gpm	2.0 gpm	0.23 gpm	1.7 gpm	0.5 gpm
8	pH (Standard Units)	8.00	6.73	7.80	7.70	7.26	7.20
9	Total Acidity (mg/l CaCO <sub>3</sub> )	1.0	5.4	16	2.3	3.4	10
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	95	120	62	130	160	100
11	Total Iron (mg/l)	0.08	ND	0.04 <sup>J</sup>	0.02	ND	0.00
12	Total Manganese (mg/l)	<0.004	0.01	0.00	<0.004	0.008	0.00
13	Total Aluminum (mg/l)	<0.04	0.19	0.03 <sup>J</sup>	<0.04	0.05	0.00
14	Total Suspended Solids (mg/l)	<6.7	ND	0.00	<6.7	ND	0.00
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	150	152	200	180	150	180
16	Total Sulfates (mg/l)	47.5	21.3	72.5	30.5	15.3	23.6
17	Specific Conductivity (umhos/cm at 25°C)**	389	352	339	406	369	307
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

City: Triadelphia State: WV Zip: 26059

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05/08  
DNR-744-9024

AEC 09684

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	DS-34.18			DS-34.19		
2	Lab ID No.	0808319	NS	1005070	0808320	0812386	0902272
3	Date Measured/Sampled	08-09-08	06/25/10	05/04/10	08-09-08	12-23-08	02/12/09
4	High (H), Low (L), Intermediate (I) (if applicable)	T for L	I	T for H	T for L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-04-08	06/24/10	05/04/10	08-04-08	12-23-08	02/12/09
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	0.22 gpm	NF	NF	0.36 gpm	1.5gpm	3.26 gpm
8	pH (Standard Units)	7.00		8.01	7.00	8.05	7.00
9	Total Acidity (mg/l CaCO <sub>3</sub> )	3.3		0.00	3.3	<5.0	6.3
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	120		130	140	83	54
11	Total Iron (mg/l)	<0.02		4.07	<0.02	0.1	<0.1
12	Total Manganese (mg/l)	<0.004		0.91	<0.004	<0.1	<0.02
13	Total Aluminum (mg/l)	<0.04		2.1	<0.04	<0.5	<0.1
14	Total Suspended Solids (mg/l)	<6.7		145	<6.7	<6.7	<6.7
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	110		370	150	130	90
16	Total Sulfates (mg/l)	27.4		21.8	21.1	16	15
17	Specific Conductivity (umhos/cm at 25°C)**	410		418	484	320	205
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

City: Triadelphia State: WV Zip: 26059

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NOTE: For each sample provide data for either item 17 or item 18.

05/08  
DNR-744-9024

AEC 09685

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	DS-117.01			DS-117.02		
2	Lab ID No.	NS	1006270	1005136	0808669	100627	1005137
3	Date Measured/Sampled	08-22-08	06-16-10	05/05/10	08-22-08	06-16-10	05/04/10
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-14-08	06-15-10	05/04/10	08-14-08	06-15-10	05/04/10
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	NF	1.17 gpm	0.82 gpm	0.02 gpm	1.56 gpm	1.56 gpm
8	pH (Standard Units)		7.69	7.42	7.30	7.28	7.12
9	Total Acidity (mg/l CaCO <sub>3</sub> )		9.9	7.6	9.0	11	6.6
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )		140	140	170	86	98
11	Total Iron (mg/l)		ND	0.04 <sup>J</sup>	0.80	0.14	0.21
12	Total Manganese (mg/l)		ND	0.00	0.119	0.03	0.03
13	Total Aluminum (mg/l)		ND	270	0.77	0.10	129
14	Total Suspended Solids (mg/l)		ND	0.00 <sup>Q</sup>	19	ND	11 <sup>JO</sup>
15	Total Hardness (mg/l as CaCO <sub>3</sub> )		188	270	190	121	129
16	Total Sulfates (mg/l)		47.2	45.3	32	32.2	24.2
17	Specific Conductivity (umhos/cm at 25°C)**		410	418	447	285	312
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

City: Triadelphia

State: WV

Zip: 26059

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05/08

DNR-744-9024

AEC 09686

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	DS-118.01			DS-101		
2	Lab ID No.	0809365	1006273	1005134	10-02-318	1005553	1008613
3	Date Measured/Sampled	09-20-08	06-16-10	05/05/10	02/04/10	05-27-10	08/25/10
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H	T for H	I	L
5	Date Last Precipitation Event (if applicable)	09-14-08	06-15-10	05/04/10	02/02/10	05-22-10	08/22
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	0.16 gpm	0.25 gpm	0.18 gpm	0.6 gpm	0.4 gpm	0.38 gpm
8	pH (Standard Units)	7.00	7.00	7.08	7.55	7.79	7.9
9	Total Acidity (mg/l CaCO <sub>3</sub> )	6.3	9.8	11	5.63	8.0	4.4
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	110	68	85	84.64	140	180
11	Total Iron (mg/l)	0.11	0.05	0.12	0.04	0.07	0.07
12	Total Manganese (mg/l)	<0.004	ND	0.00	<0.03	0.03	0.02
13	Total Aluminum (mg/l)	0.08	ND	0.05 <sup>d</sup>	0.12	ND	0.14
14	Total Suspended Solids (mg/l)	<6.7	ND	0.00 <sup>q</sup>	<1.0	ND	ND
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	170	121	110	92.0	192	281
16	Total Sulfates (mg/l)	35	34.6	38.1	14.0	20.3	30.1
17	Specific Conductivity (umhos/cm at 25°C)**	450	258	296	247	335	421
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc./Industrial Lab Analysis

Address: RD #2 Box 227A, BattleRun Rd./65 36<sup>th</sup> Street

City: Triadelphia/Wheeling

State: WV

Zip: 26059/26003

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05/08

DNR-744-9024

AEC 09687

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-1

1	ID No. Of Sampling Site From Hydrology Map	DS-152A					
2	Lab ID No.	10-02-317	1005552	1008610			
3	Date Measured/Sampled	02/04/10	05-27-10	08/25/10			
4	High (H), Low (L), Intermediate (I) (if applicable)	T for H	I	L			
5	Date Last Precipitation Event (if applicable)	02/02/10	05-22-10	08/22/10			
6	Static Water Level of Well below Land Surface (feet)*	--	--	--			
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	0.75 gpm	0.5 gpm	0.34 gpm			
8	pH (Standard Units)	7.82	7.67	7.2			
9	Total Acidity (mg/l CaCO <sub>3</sub> )	6.67	13	16			
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	142.18	180	200			
11	Total Iron (mg/l)	<0.03	0.03	0.05			
12	Total Manganese (mg/l)	<0.03	ND	ND			
13	Total Aluminum (mg/l)	0.09	0.11	0.13			
14	Total Suspended Solids (mg/l)	<1.0	ND	41ND			
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	158.0	229	271			
16	Total Sulfates (mg/l)	26.0	34.1	41.4			
17	Specific Conductivity (umhos/cm at 25°C)**	473	433	506			
18	Total Dissolved Solids (mg/l)**	--	--	--			

Laboratory Name: Industrial Lab Analysis

Address: 65 36<sup>th</sup> Street

City: Wheeling

State: WV

Zip: 26003

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05/08 DNR-744-9024

AEC 09688

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	DW-76.01			DW-95.00		
2	Lab ID No.	0808653	1006276	1005183	0808604	1006276	1005183
3	Date Measured/Sampled	08-22-08	06-16-10	05/07/10	08-20-08	06-16-10	05/07/10
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-14-08	06-15-10	05/04/10	08-14-08	06-15-10	05/04/10
6	Static Water Level of Well below Land Surface (feet)*	8.3'	2.8'	5.4'	19.0'	2.8'	5.4'
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	--	--	--	--	--	--
8	pH (Standard Units)	7.26	7.10	7.34	6.77	7.10	7.34
9	Total Acidity (mg/l CaCO <sub>3</sub> )	2.5	1.9	7.0	18	1.9	7.0
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	56	17	11	91	17	11
11	Total Iron (mg/l)	<0.02	1.35	0.09 <sup>J</sup>	4.1	1.35	0.09 <sup>J</sup>
12	Total Manganese (mg/l)	0.080	0.02	0.013 <sup>J</sup>	0.371	0.02	0.013 <sup>J</sup>
13	Total Aluminum (mg/l)	0.10	1.57	0.10	1.1	1.57	0.10
14	Total Suspended Solids (mg/l)	<6.7	20	0.00	110	20	0.00
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	140	93	20	350	93	20
16	Total Sulfates (mg/l)	57	18.3	5.10	42	18.3	5.10
17	Specific Conductivity (umhos/cm at 25°C)**	324	91.8	40.2	1230	91.8	40.2
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

City: Triadelphia State: WV Zip: 26059

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NOTE: For each sample provide data for either item 17 or item 18.

05/08  
DNR-744-9024

AEC 09689



**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	DW-96.00			DW-108.00		
2	Lab ID No.	NS	1006274	1005176	0808513	1006337	1005180
3	Date Measured/Sampled	08-20-08	06-16-10	05/07/10	08-16-08	06-16-10	05/07/10
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-14-08	06-15-10	05/04/10	08-14-08	06-15-10	05/04/10
6	Static Water Level of Well below Land Surface (feet)*	NA	NA	NA	8.2'	4.0'	5.6'
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	--	--	--	--	--	--
8	pH (Standard Units)		7.57	7.12	7.35	7.64	7.31
	Total Acidity (mg/l CaCO <sub>3</sub> )		39	32	6.8	5.0	12
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )		190	210	130	130	150
11	Total Iron (mg/l)		24.31	31	0.078	0.22	0.55
12	Total Manganese (mg/l)		0.41	0.316	<0.010	0.01	0.032
13	Total Aluminum (mg/l)		ND	0.33	0.026	0.25	0.45S
14	Total Suspended Solids (mg/l)		79	62	<6.7	ND	0.00
15	Total Hardness (mg/l as CaCO <sub>3</sub> )		731	881	175	245	410
16	Total Sulfates (mg/l)		14.1	36.3	76.0	115	137
17	Specific Conductivity (umhos/cm at 25°C)**		1710	1700	538	637	737
18	Total Dissolved Solids (mg/l)**		--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

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State: WV

Zip: 26059

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05/08  
DNR-744-9024

AEC 09690

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	DW-113.00			DW-118.00		
2	Lab ID No.	0808603	106430	1005181	0808603	0812387	0902221
3	Date Measured/Sampled	08-20-08	06/21/10	05/07/10	08-20-08	12-23-08	02/11/09
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-14-08	06/14/10	05/04/10	08-14-08	12-23-08	02/11/09
6	Static Water Level of Well below Land Surface (feet)*	17.3'	14.3'	16.0'	17.3'	11.6'	6.7'
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	--	--	--	--	--	--
8	pH (Standard Units)	7.62	7.37	7.55	7.62	7.19	6.62
9	Total Acidity (mg/l CaCO <sub>3</sub> )	6.5	1.7	6.9	6.5	9.0	7.6
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	180	140	140	180	36	33
11	Total Iron (mg/l)	0.27	0.29	0.55	0.27	0.1	1.9
12	Total Manganese (mg/l)	0.017	0.04	0.032	0.017	<0.1	0.024
13	Total Aluminum (mg/l)	0.18	0.18	0.60	0.18	<0.5	0.3
14	Total Suspended Solids (mg/l)	13	ND	10 <sup>J</sup>	13	<6.7	<6.7
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	250	145	170	250	90	180
16	Total Sulfates (mg/l)	60	34.6	38.1	60	36	40
17	Specific Conductivity (umhos/cm at 25°C)**	518	350	409	518	200	196
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

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\*

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05/08

DNR-744-9024

AEC 09691

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	DW-113.00			DW-116.00		
2	Lab ID No.	0808603	106430	1005181	NS	NS	NS
3	Date Measured/Sampled	08-20-08	06/21/10	05/07/10	08-16-08	06-16-10	05/07/10
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-14-08	06/14/10	05/04/10	08-14-08	06-14-10	05/04/10
6	Static Water Level of Well below Land Surface (feet)*	17.3'	14.3'	16.0'	NA Under the house	NA Under the house	NA Under the house
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	--	--	--	--	--	--
8	pH (Standard Units)	7.62	7.37	7.55			
9	Total Acidity (mg/l CaCO <sub>3</sub> )	6.5	1.7	6.9			
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	180	140	140			
11	Total Iron (mg/l)	0.27	0.29	0.55			
12	Total Manganese (mg/l)	0.017	0.04	0.032			
13	Total Aluminum (mg/l)	0.18	0.18	0.60			
14	Total Suspended Solids (mg/l)	13	ND	10 <sup>J</sup>			
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	250	145	170			
16	Total Sulfates (mg/l)	60	34.6	38.1			
17	Specific Conductivity (umhos/cm at 25°C)**	518	350	409			
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.  
Address: RD #2 Box 227A, BattleRun Rd.  
City: Triadelphia State: WV Zip: 26059

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05/08  
DNR-744-9024

SEP 14 2010

AEC 09692

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	W-29.02			W-35.00		
2	Lab ID No.	0808433	0901001	0902286	0808367	0907251	N-02-092
3	Date Measured/Sampled	08-12-08	12-31-08	02/12/09	08/11/08	07/13/09	02/05/10
4	High (H), Low (L), Intermediate (I) (if applicable)	T for L	I	T for H	T for L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-11-08	12-23-08	02/12/09	08/10/08	07/02/09	02/05/10
6	Static Water Level of Well below Land Surface (feet)*	23'	YY	YY	Z	Z	Z
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	--	--	--	--	--	--
8	pH (Standard Units)	7.58	7.72	7.89	7.07	7.30	--
9	Total Acidity (mg/l CaCO <sub>3</sub> )	4.6	7.6	5.6	18	28	--
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	200	200	200	208	290	--
11	Total Iron (mg/l)	0.02	<0.1	<0.1	0.27	0.2	--
12	Total Manganese (mg/l)	<0.004	<0.1	<0.02	0.437	0.36	--
13	Total Aluminum (mg/l)	<0.04	<0.5	<0.1	<0.04	0.2	--
14	Total Suspended Solids (mg/l)	<6.7	<6.7	<6.7	<6.7	<10	--
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	280	250	230	360	420	--
16	Total Sulfates (mg/l)	27.0	41	42	63.1	87	--
17	Specific Conductivity (umhos/cm at 25°C)**	541	596	553	857	695	--
18	Total Dissolved Solids (mg/l)**	--	--	--	--		

Laboratory Name: Tra-Det, Inc.

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05/08  
DNR-744-9024

AEC 09693

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	W-71.00					
2	Lab ID No.	0808512	1006399	1005175			
3	Date Measured/Sampled	08-21-08	06/17/10	05/07/10			
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H			
5	Date Last Precipitation Event (if applicable)	08-20-08	06/16/10	05/04/10			
6	Static Water Level of Well below Land Surface (feet)*	Z***	Z***	Z***			
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	--	--	--			
8	pH (Standard Units)	7.59	7.56	7.58			
9	Total Acidity (mg/l CaCO <sub>3</sub> )	6.8	6.0	7.2			
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	220	210	190			
11	Total Iron (mg/l)	0.019	0.03	0.00			
12	Total Manganese (mg/l)	<0.010	0.01	0.00			
13	Total Aluminum (mg/l)	0.013	0.03	0.07 <sup>J</sup>			
14	Total Suspended Solids (mg/l)	<6.7	ND	0.00			
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	218	295	70			
16	Total Sulfates (mg/l)	41.7	40.0	40.5			
17	Specific Conductivity (umhos/cm at 25°C)**	672	573	600			
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

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05/08  
DNR-744-9024

AEC 09694

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	W-77.00			W-77.01		
2	Lab ID No.	0809122	1006432	1005179	0809123	1006433	1005178
3	Date Measured/Sampled	09-05-08	06/21/10	05/07/10	09-05-08	06/21/10	05/07/10
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-31-08	06/16/10	05/04/10	08-31-08	06/16/10	05/04/10
6	Static Water Level of Well below Land Surface (feet)*	12'	9.8'	8.5'	25.5'	23.3'	23.6'
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	--	--	--	--	--	--
8	pH (Standard Units)	7.00	7.17	7.23	7.00	6.56	7.29
9	Total Acidity (mg/l CaCO <sub>3</sub> )	18	18	40	5.0	10	11
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	410	400	390	180	82	61
11	Total Iron (mg/l)	58	7.75	1.7	1.7	1.73	0.24
12	Total Manganese (mg/l)	0.420	0.12	0.095	0.090	0.22	0.20
13	Total Aluminum (mg/l)	0.49	0.24	0.14	0.25	0.45	0.09
14	Total Suspended Solids (mg/l)	190	13	13 <sup>J</sup>	<6.7	ND	0.00
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	500	448	699	300	158	190
16	Total Sulfates (mg/l)	54	50.2	86.3	62	44.8	47.1
17	Specific Conductivity (umhos/cm at 25°C)**	1030	784	840	783	357	354
18	Total Dissolved Solids (mg/l)**	--	--	0.07 <sup>QJ</sup>	--	--	1.37 <sup>Q</sup>

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05/08

DNR-744-9024

AEC 09695

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map				W-80.00		
2	Lab ID No.				0808671	1006395	1005164
3	Date Measured/Sampled				08-22-08	06/17/10	05/06/10
4	High (H), Low (L), Intermediate (I) (if applicable)				L	I	T for H
5	Date Last Precipitation Event (if applicable)				08-20-08	06/15/10	05/04/10
6	Static Water Level of Well below Land Surface (feet)*				18.5'	17.3'	19.4'
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)				--	--	--
8	pH (Standard Units)				8.39	7.96	7.90
9	Total Acidity (mg/l CaCO <sub>3</sub> )				0.50	2.5	14
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )				180	170	1900
11	Total Iron (mg/l)				21	0.70	340
12	Total Manganese (mg/l)				0.240	0.03	24.3
13	Total Aluminum (mg/l)				4.7	0.29	48.6
14	Total Suspended Solids (mg/l)				88	24	13.1
15	Total Hardness (mg/l as CaCO <sub>3</sub> )				160	220	70
16	Total Sulfates (mg/l)				8.3	18.3	39.3
17	Specific Conductivity (umhos/cm at 25°C)**				396	411	493
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, Battle Run Rd.

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State: WV

Zip: 26059

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05/08

DNR-744-9024

AEC 09696

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	W-80.01			W-87.00		
2	Lab ID No.	0808672	1006396	1005165	NS	1006311	1005174
3	Date Measured/Sampled	08-22-08	06/17/10	05/06/10	09/10/08	06-16-10	05/07/10
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-20-08	06/16/10	05/04/10	09-08-08	06-15-10	05/04/10
6	Static Water Level of Well below Land Surface (feet)*	20.5'	16.2'	20.3'	Z	Z	Z
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	--	--	--	--	--	--
8	pH (Standard Units)	8.43	7.83	7.83	7.48	7.64	7.19
9	Total Acidity (mg/l CaCO <sub>3</sub> )	8.4	6.1	7.9	3.5	4.8	8.9
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	420	230	210	210	86	180
11	Total Iron (mg/l)	20	0.22	3.3	<0.02	ND	0.00
12	Total Manganese (mg/l)	0.240	0.02	0.096	<0.004	0.01	0.00
13	Total Aluminum (mg/l)	2.8	0.06	0.74	<0.04	0.11	0.03 <sup>J</sup>
14	Total Suspended Solids (mg/l)	180	ND	42	<6.7	ND	0.00
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	100	231	340	350	114	361
16	Total Sulfates (mg/l)	4.6	35.8	33.8	56	23.7	51.3
17	Specific Conductivity (umhos/cm at 25°C)**	392	584	579	852	340	638
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, Battle Run Rd.

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05/08

DNR-744-9024

AEC 09697



**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map				WL-91.00		
2	Lab ID No.				0808655	1006309	1005182
3	Date Measured/Sampled				08-21-08	06-16-10	05/06/10
4	High (H), Low (L), Intermediate (I) (if applicable)				L	I	T for H
5	Date Last Precipitation Event (if applicable)				08-20-08	06-15-10	05/04/10
6	Static Water Level of Well below Land Surface (feet)*				30'T	30'T	30'T
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)				--	--	--
8	pH (Standard Units)				7.30	7.50	7.12
9	Total Acidity (mg/l CaCO <sub>3</sub> )				15	16	28
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )				210	190	200
11	Total Iron (mg/l)				0.04	0.07	0.53
12	Total Manganese (mg/l)				0.006	ND	0.037
13	Total Aluminum (mg/l)				0.05	ND	0.40
14	Total Suspended Solids (mg/l)				<6.7	ND	52
15	Total Hardness (mg/l as CaCO <sub>3</sub> )				580	158	670
16	Total Sulfates (mg/l)				39	35.8	35.7
17	Specific Conductivity (umhos/cm at 25°C)**				1660	1450	1570
18	Total Dissolved Solids (mg/l)**				--	--	--

Laboratory Name: Tra-Det, Inc.

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05/08

DNR-744-9024

AEC 09698

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	W-94.00			W-117.00		
2	Lab ID No.	NS	NS	NS	NS	1006269	1005159
3	Date Measured/Sampled	08-21-08	06/17/10	05/07/10	08-22-08	06-16-10	05/06/10
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-20-08	06/16/10	05/04/10	08-21-08	06-15-10	05/04/10
6	Static Water Level of Well below Land Surface (feet)*	18.2'	Z	Z	38.0'	37.4'	37.4'
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	--	--	--	--	--	--
8	pH (Standard Units)	7.83			7.25	8.16	7.20
9	Total Acidity (mg/l CaCO <sub>3</sub> )	2.9			20	14	16
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	140			270	260	250
11	Total Iron (mg/l)	19			0.26	0.65	0.22
12	Total Manganese (mg/l)	1.13			0.011	0.03	0.013 <sup>J</sup>
13	Total Aluminum (mg/l)	0.07			0.07	0.23	0.17
14	Total Suspended Solids (mg/l)	120			<6.7	ND	0.00
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	260			370	343	310
16	Total Sulfates (mg/l)	38			72	66.5	70.6
17	Specific Conductivity (umhos/cm at 25°C)**	1020			802	696	714
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

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05/08  
DNR-744-9024

AEC 09699

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	W-123.00			W-140.00		
2	Lab ID No.	NS	1006272	1005160	1008606	1006431	1005256
3	Date Measured/Sampled	08-20-08	06-16-10	05/06/10	08/25/10	06/21/10	05/12/10
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-14-08	06-15-10	05/04/10	08/23/10	06/16/10	05/04/10
6	Static Water Level of Well below Land Surface (feet)*	Z	Z	Z	24.5'	23.7'	23.7'
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	--	--	--	--	--	--
8	pH (Standard Units)		7.62	7.27	7.6	7.42	7.35
9	Total Acidity (mg/l CaCO <sub>3</sub> )		15	17	17	2.0	13
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )		260	240	280	300	290
11	Total Iron (mg/l)		ND	0.03 <sup>J</sup>	2.24	0.75	1.5
12	Total Manganese (mg/l)		ND	0.00	1.80	0.64	1.13
13	Total Aluminum (mg/l)		ND	0.10	0.26	0.14	0.12
14	Total Suspended Solids (mg/l)		ND	0.00	12	ND	10
15	Total Hardness (mg/l as CaCO <sub>3</sub> )		362	429	444	426	469
16	Total Sulfates (mg/l)		83.3	93	98.6	104	99.4
17	Specific Conductivity (umhos/cm at 25°C)**		855	896	926	922	916
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, Battle Run Rd.

City: Triadelphia

State: WV

Zip: 26059

\*

NOTE: If information required by item 6 is unobtainable, submit as an addendum to Hydrologic Analyses a statement giving the reasons why the information is unobtainable.

NOTE: For each sample provide data for either item 17 or item 18.

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DNR-744-9024

AEC 09700

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	W-181A					
2	Lab ID No.	0110197	0202432	1002032			
3	Date Measured/Sampled	10-17-01	02-27-02	02-01-10			
4	High (H), Low (L), Intermediate (I) (if applicable)	L	H	P			
5	Date Last Precipitation Event (if applicable)	1016/01	02/27/02	01/27/10			
6	Static Water Level of Well below Land Surface (feet)*	Z	Z	Z			
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	--	--	--			
8	pH (Standard Units)	8.0	7.80	7.32			
9	Total Acidity (mg/l CaCO <sub>3</sub> )	4.2	5.4	9.0			
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	210	300	190			
11	Total Iron (mg/l)	<0.05	0.11	ND			
12	Total Manganese (mg/l)	<0.02	0.01	ND			
13	Total Aluminum (mg/l)	NA	NA	0.04			
14	Total Suspended Solids (mg/l)	<1.0	<1.0	<10			
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	210	190	261			
16	Total Sulfates (mg/l)	41	120	44.9			
17	Specific Conductivity (umhos/cm at 25°C)**	440	790	477			
18	Total Dissolved Solids (mg/l)**	ND	ND				

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, Battle Run Rd.

City: Triadelphia

State: WV

Zip: 26059

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NOTE: For each sample provide data for either item 17 or item 18.

05/08  
DNR-744-9024

AEC 09701

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	W-595					
2	Lab ID No.	210219	304063		NS	NS	1008608
3	Date Measured/Sampled	10/21/02	04/07/03		05-27-10	02/02/10	08/25/10
4	High (H), Low (L), Intermediate (I) (if applicable)	L	H		I	T for H	L
5	Date Last Precipitation Event (if applicable)	10/19/02	04/06/03		05-22-10	02/02/10	08/22/10
6	Static Water Level of Well below Land Surface (feet)*	9'	4'		X	X	7.5'
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	--	--		--	--	--
8	pH (Standard Units)	7.8	7.6				7.8
9	Total Acidity (mg/l CaCO <sub>3</sub> )	8.5	16				12
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	220	180				150
11	Total Iron (mg/l)	7.2	27				25.99
12	Total Manganese (mg/l)	0.2	0.29				0.25
13	Total Aluminum (mg/l)	NA	NA				4.06
14	Total Suspended Solids (mg/l)	61	130				272
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	180	190				302
16	Total Sulfates (mg/l)	15	39				20.7
17	Specific Conductivity (umhos/cm at 25°C)**	480	500				432
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, Battle Run Rd.

City: Triadelphia

State: WV

Zip: 26059

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AEC 09702

- (5) Submit required analyses on the Hydrologic Analyses for representative wells and developed springs. Based on the data on the Ground Water Inventory and Hydrologic Analyses, identify the seasonal variations of ground water quality and quantity.
- (6) Submit Analysis of Existing Ground Water File Data from the Division of Water.  
**See Addendum to Part 2 Item C (6)**

**D. SURFACE WATER INFORMATION**

- (1) List the name of the watershed that will receive water discharges from the proposed shadow and adjacent areas as listed in the "Gazetteer of Ohio Streams" published by the Ohio Department of Natural Resources.

**Captina Creek and Sunfish Creek**

- (2) Are there any perennial or intermittent streams or other surface water bodies, including public water supply sources, on the proposed shadow area and adjacent area?

Yes ☒ No ☐ If "yes," submit Surface Water Inventory and Hydrologic Analyses.

- (3) Based on the quality and quantity measurements listed on Surface Water Inventory and Hydrologic Analyses, and from other information available to the applicant and submitted with this application, identify the seasonal variations in water quality and quantity for the surface water sources on this application area and adjacent areas.

**See Hydrologic Analyses**

**E. CLIMATOLOGICAL INFORMATION**

If requested by the chief, subsequent to the filing of the permit application, provide the climatological information.

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

SURFACE WATER INVENTORY

Applicant's Name: American Energy Corporation

Beallsville

D-0425-15

ID No. Of Sampling Site from Hydrology Map	State Plane X-Y Coordinates	Surface Elevation (ft msl)	Discharge* (gpm or cfs)	Date Measured	Known Uses, including public water	Type of Supply (pond, perennial or intermittent stream, etc.)	Name of Owner
D-11	X 2,384,589 Y 678,842	1135'	--	5/10, 6/10, 8/10	None	Intermittent	See Map
D-8A	X 2,378,048 Y 678,860	1122'	--	8/08, 12/08, 2/09	None	Perennial	See Map
D-8D	X 2,378,146 Y 679,493	1131'	--	8/08, 11/08, 2/09	None	Intermittent	See Map
D-8E	X 2,378,968 Y 679,888	1100'	--	8/08, 12/08, 2/09	None	Intermittent	See Map
D-9B	X 2,382,453 Y 679,474	1140'	--	8/08, 12/08, 2/09	None	Intermittent	See Map
D-9C	X 2,382,475 Y 680,123	1120'	--	8/08, 12/08, 2/09	None	Intermittent	See Map
D-9D	X 2,381,664 Y 680,371	1160'	--	8/08, 12/08, 2/09	None	Intermittent	See Map

\* Do not include discharge values if such measurements are reported on the Hydrologic Analyses.

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**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**SURFACE WATER INVENTORY**

Applicant's Name: American Energy Corporation

Beallsville

D-0425-15

ID No. Of Sampling Site from Hydrology Map	State Plane X-Y Coordinates	Surface Elevation (ft msl)	Discharge* (gpm or cfs)	Date Measured	Known Uses, including public water	Type of Supply (pond, perennial or intermittent stream, etc.)	Name of Owner
U-11	X 2,384,103 Y 678,155	1200'	--	5/10, 6/10, 8/10	None	Intermittent	See Map
U-11A	X 2,383,796 Y 678,431	1215'	--	5/10, 6/10, 8/10	None	Intermittent	See Map
U-7	X 2,375,473 Y 679,675	1138'	--	8/08, 12/08, 2/09	None	Intermittent	See Map
U-8	X 2,377,073 Y 678,089	1157'	--	8/08, 1/09, 2/09	None	Perennial	See Map
U-8B	X 2,378,256 Y 678,121	1140'	--	8/08, 1/09, 2/09	None	Intermittent	See Map
U-8C	X 2,378,465 Y 678,164	1140'	--	11/8, 2/09, 8/10	None	Intermittent	See Map
U-8D1	X 2,376,793 Y 679,860	1174'	--	8/08, 12/08, 2/09	None	Intermittent	See Map
U-8E	X 2,380,414 Y 678,447	1190'	--	9/08, 12/08, 2/09	None	Intermittent	See Map

\* Do not include discharge values if such measurements are reported on the Hydrologic Analyses.

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OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

SURFACE WATER INVENTORY

Applicant's Name: American Energy Corporation

Beallsville

D-0425-15

ID No. Of Sampling Site from Hydrology Map	State Plane X-Y Coordinates	Surface Elevation (ft msl)	Discharge* (gpm or cfs)	Date Measured	Known Uses, including public water	Type of Supply (pond, perennial or intermittent stream, etc.)	Name of Owner
U-9	X 2,382,820 Y 678,475	1191'	--	8/08, 11/08, 2/09	None	Intermittent	See Map
U-9A	X 2,383,389 Y 679,312	1220'	--	8/08, 11/08, 2/09	None	Intermittent	See Map
P-27.01	X 2,375,090 Y 677,654	1200'	--	8/08, 5/10, 6/10	None	Pond	See Map
P-29.03	X 2,376,436 Y 679,869	1200'	--	8/08, 5/10, 6/10	+Livestock	Pond	See Map

\* Do not include discharge values if such measurements are reported on the Hydrologic Analyses.

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**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**SURFACE WATER INVENTORY**

Applicant's Name: American Energy Corporation

Beallsville

D-0425-15

ID No. Of Sampling Site from Hydrology Map	State Plane X-Y Coordinates	Surface Elevation (ft msl)	Discharge* (gpm or cfs)	Date Measured	Known Uses, including public water	Type of Supply (pond, perennial or intermittent stream, etc.)	Name of Owner
P-34.01	X 2,381,669 Y 679,329	1160'	--	8/08, 5/10, 6/10	+Recreational	Pond	See Map
P-34.03	X 2,381,154 Y 679,897	1200'	--	8/08, 5/10, 6/10	Agricultural	Pond	See Map
P-34.05	X 2,380,300 Y 679,623	1210'	--	8/08, 5/10, 6/10	+Agricultural	Pond	See Map
P-34.07	X 2,380,429 Y 679,099	1220'	--	8/08, 5/10, 6/10	+Recreational	Pond	See Map
P-34.11	X 2,378,395 Y 679,727	1100'	--	8/08	+Recreational	Pond	See Map
P-69.02	X 2,382,126 Y 677,572	1210'	--	9/08, 5/10, 6/10	Livestock	Pond	See Map
P-76.02	X 2,381,079 Y 677,642	1230'	--	8/08, 5/10, 6/10	+Recreational	Pond	See Map
P-80.08	X 2,382,992 Y 678,337	1210'	--	8/08, 5/10, 6/10	+Livestock	Pond	See Map

\* Do not include discharge values if such measurements are reported on the Hydrologic Analyses.

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Footnote: +Used supply likely to be impacted by mining induced subsidence.

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	U-7			U-8		
2	Lab ID No.	0808294	0901004		0808297	0901074	0902225
3	Date Measured/Sampled	08-08-08	12-31-08	02/12/09	08/08/08	01/05/09	02/11/09
4	High (H), Low (L), Intermediate (I) (if applicable)	T for L	I	T for H	T for L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-04-08	12-26-08	02/12/09	08-04-08	01/04/09	02/11/09
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	0.0009 cfs	0.01 cfs	0.14 cfs	0.0003 cfs	0.003 cfs	0.18 cfs
8	pH (Standard Units)	7.85	7.66	6.77	7.67	7.73	7.28
9	Total Acidity (mg/l CaCO <sub>3</sub> )	<0.11	<5	<5	1.7	<5	<5
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	180	87	58	130	39	31
11	Total Iron (mg/l)	0.06	0.1	0.06	0.47	0.1	0.16
12	Total Manganese (mg/l)	0.012	<0.1	<0.02	0.011	<0.1	<0.02
13	Total Aluminum (mg/l)	0.04	<0.5	<0.1	0.05	<0.5	0.21
14	Total Suspended Solids (mg/l)	18	<6.7	<6.7	<6.7	11	16
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	210	190	100	180	110	50
16	Total Sulfates (mg/l)	34.8	38	28	39.3	29	20
17	Specific Conductivity (umhos/cm at 25°C)**	534	302	230	540	199	128
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.  
Address: RD #2 Box 227A, BattleRun Rd.  
City: Triadelphia State: WV Zip: 26059

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05/08  
DNR-744-9024

AEC 09708

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	U-8B			U-8C		
2	Lab ID No.	0808296	0901073	0902223	1008605	--	0902222
3	Date Measured/Sampled	08/08/08	01/05/09	02/11/09	08/25/10	11/26/08	02/11/09
4	High (H), Low (L), Intermediate (I) (if applicable)	T for L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-04-08	01/04/09	02/11/09	08/22/10	11/25/08	02/11/09
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	0.006 cfs	0.02 cfs	0.13 cfs	0.003 cfs	DRY	0.34 cfs
8	pH (Standard Units)	7.96	7.74	7.53	8.0	N/S	7.42
9	Total Acidity (mg/l CaCO <sub>3</sub> )	0.36	<5	<5	3.2		<5
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	170	62	38	120		34
11	Total Iron (mg/l)	0.13	0.2	1.6	0.45		1.1
12	Total Manganese (mg/l)	0.053	<0.1	0.041	0.07		0.037
13	Total Aluminum (mg/l)	0.12	<0.5	2	0.79		1.3
14	Total Suspended Solids (mg/l)	<6.7	<6.7	43	ND		43
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	200	100	200	182		200
16	Total Sulfates (mg/l)	29.4	37	24	31.4		24
17	Specific Conductivity (umhos/cm at 25°C)**	527	271	210	418		192
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.  
Address: RD #2 Box 227A, BattleRun Rd.  
City: Triadelphia State: WV Zip: 26059

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05/08  
DNR-744-9024

AEC 09709

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	U-8D1			U-8E		
2	Lab ID No.	0808435	0901006	0902227	0809315	0901007	0902274
3	Date Measured/Sampled	08-12-08	12-31-08	02/11/09	09-17-08	12-31-08	02/12/09
4	High (H), Low (L), Intermediate (I) (if applicable)	T for L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-12-08	12-26-08	02/11/09	09-14-08	12-26-08	02/12/09
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	0.0004 cfs	0.005 cfs	0.40 cfs	0.000006 cfs	0.013 cfs	0.9 cfs
8	pH (Standard Units)	7.69	7.61	7.47	7.38	7.63	7.47
9	Total Acidity (mg/l CaCO <sub>3</sub> )	14	<5	<5	9.9	<5	<5
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	290	74	40	160	32	29
11	Total Iron (mg/l)	1.04	0.5	0.69	6.5	0.1	0.12
12	Total Manganese (mg/l)	0.603	0.6	0.091	4.50	<0.1	0.19
13	Total Aluminum (mg/l)	0.539	<0.5	0.67	0.61	<0.5	0.1
14	Total Suspended Solids (mg/l)	37	65	91	87	<10	8.7
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	249	90	70	300	80	70
16	Total Sulfates (mg/l)	20.3	34	19	12	26	21
17	Specific Conductivity (umhos/cm at 25°C)**	216	205	154	765	266	262
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.  
Address: RD #2 Box 227A, BattleRun Rd.  
City: Triadelphia State: WV Zip: 26059

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AEC 09710

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	U-9			U-9A		
2	Lab ID No.	--	--	0902273	--	--	0902215
3	Date Measured/Sampled	08-22-08	11-26-08	02/12/09	08-22-08	11-26-08	02/11/09
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-14-08	11-25-08	02/11/09	08-14-08	11-25-08	02/11/09
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	DRY	DRY	0.0009 cfs	DRY	DRY	0.63 cfs
8	pH (Standard Units)	N/S	N/S	7.11	N/S	N/S	7.26
9	Total Acidity (mg/l CaCO <sub>3</sub> )			<5			<5
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )			57			45
11	Total Iron (mg/l)			0.07			0.54
12	Total Manganese (mg/l)			<0.02			<0.02
13	Total Aluminum (mg/l)			<0.1			0.6
14	Total Suspended Solids (mg/l)			10			<10
15	Total Hardness (mg/l as CaCO <sub>3</sub> )			80			100
16	Total Sulfates (mg/l)			17			13
17	Specific Conductivity (umhos/cm at 25°C)**			162			151
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

City: Triadelphia State: WV Zip: 26059

\* NOTE: If information required by item 6 is unobtainable, submit as an addendum to Hydrologic Analyses a statement giving the reasons why the information is unobtainable.

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05/08  
DNR-744-9024

AEC 09711

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	U-11			U-11A		
2	Lab ID No.	1008609	1006334	1005287	1008611	1006335	1005288
3	Date Measured/Sampled	08/25/10	06-16-10	05/13/10	08/25/10	06-16-10	05/13/10
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08/22/10	06-15-10	05/12/10	08/22/10	06-15-10	05/12/10
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	0.0001 cfs	0.0003 cfs	0.002 cfs	0.0001 cfs	0.0008 cfs	0.002 cfs
8	pH (Standard Units)	8.2	8.09	7.73	7.9	8.24	7.47
9	Total Acidity (mg/l CaCO <sub>3</sub> )	3.0	4.7	ND	3.1	3.2	3.0
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	210	170	200	130	110	82
11	Total Iron (mg/l)	0.53	0.06	1.41	0.63	0.65	1.01
12	Total Manganese (mg/l)	0.33	0.03	0.08	0.26	0.14	0.09
13	Total Aluminum (mg/l)	1.04	0.03	2.26	1.47	0.62	1.49
14	Total Suspended Solids (mg/l)	8.0	ND	44	14	50	17
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	281	200	360	213	157	138
16	Total Sulfates (mg/l)	72.2	36.4	52.9	29.5	25.5	24.6
17	Specific Conductivity (umhos/cm at 25°C)**	562	432	504	364	304	237
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

City: Triadelphia State: WV Zip: 26059

\* NOTE: If information required by item 6 is unobtainable, submit as an addendum to Hydrologic Analyses a statement giving the reasons why the information is unobtainable.

NOTE: For each sample provide data for either item 17 or item 18.

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DNR-744-9024

AEC 09712

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	D-8A			D-8D		
2	Lab ID No.	--	0812420	0902224	--	0811336	0902226
3	Date Measured/Sampled	08-08-08	12-29-08	02/11/09	08-08-08	11-26-08	02/11/09
4	High (H), Low (L), Intermediate (I) (if applicable)	T for L	I	T for H	T for L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-04-08	12-26-08	02/11/9	08-04-08	11-25-08	02/11/09
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	Dry	0.0015 cfs	1.66 cfs	Dry	0.001 cfs	0.68 cfs
8	pH (Standard Units)	N/S	8.18	7.44	N/S	7.79	7.40
9	Total Acidity (mg/l CaCO <sub>3</sub> )		2.2	<5		<5.0	<5
	Total Alkalinity (mg/l CaCO <sub>3</sub> )		44	37		57	44
11	Total Iron (mg/l)		0.3	1.5		<0.1	0.28
12	Total Manganese (mg/l)		<0.1	0.047		<0.1	<0.02
13	Total Aluminum (mg/l)		0.5	1.7		<0.5	0.3
14	Total Suspended Solids (mg/l)		<6.7	45		<6.7	23
15	Total Hardness (mg/l as CaCO <sub>3</sub> )		80	210		160	60
16	Total Sulfates (mg/l)		29	25		60	16
17	Specific Conductivity (umhos/cm at 25°C)**		207	198		411	154
18	Total Dissolved Solids (mg/l)**	--		--	--	--	--

Laboratory Name: Tra-Det, Inc.  
Address: RD #2 Box 227A, BattleRun Rd.  
City: Triadelphia State: WV Zip: 26059

\* NOTE: If information required by item 6 is unobtainable, submit as an addendum to Hydrologic Analyses a statement giving the reasons why the information is unobtainable.

\* NOTE: For each sample provide data for either item 17 or item 18.

05/08  
DNR-744-9024

AEC 09713



**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	D-8E			D-9B		
2	Lab ID No.	0809028	0901003	0902275	--	0901029	0902216
3	Date Measured/Sampled	08-11-08	12-31-08	02/12/09	08-22-08	01-02-09	02/11/09
4	High (H), Low (L), Intermediate (I) (if applicable)	T for L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-04-08	12-26-08	02/12/09	08-14-08	12-26-08	02/11/09
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	0.0008 cfs	0.03 cfs	0.675 cfs	DRY	0.09 cfs	0.74 cfs
8	pH (Standard Units)	7.15	7.85	7.05	N/S	7.67	7.37
9	Total Acidity (mg/l CaCO <sub>3</sub> )	1.4	<5	<5		<5	<5
	Total Alkalinity (mg/l CaCO <sub>3</sub> )	180	57	46		70	45
11	Total Iron (mg/l)	1.1	0.1	0.12		0.1	0.57
12	Total Manganese (mg/l)	1.90	0.1	0.046		0.1	0.044
13	Total Aluminum (mg/l)	<0.04	<0.5	0.15		<0.5	0.5
14	Total Suspended Solids (mg/l)	<6.7	<6.7	<6.7		<6.7	24
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	280	130	20		90	150
16	Total Sulfates (mg/l)	18	27	90		24	16
17	Specific Conductivity (umhos/cm at 25°C)**	604	277	246		206	153
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.  
Address: RD #2 Box 227A, BattleRun Rd.  
City: Triadelphia State: WV Zip: 26059

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05/08  
DNR-744-9024

AEC 09714

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	D-9C			D-9D		
2	Lab ID No.	--	0901030	0902214	--	0901031	0902217
3	Date Measured/Sampled	08-25-08	01-02-09	02/11/09	08-25-08	01-02-09	02/11/09
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-14-08	12-26-08	02/11/09	08-14-08	12-26-08	02/11/09
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	DRY	0.13 cfs	0.70 cfs	DRY	0.004 cfs	0.13 cfs
8	pH (Standard Units)	N/S	7.69	7.44	N/S	7.23	8.94
	Total Acidity (mg/l CaCO <sub>3</sub> )		<5	<5		5.6	<5
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )		68	44		51	19
11	Total Iron (mg/l)		0.1	0.73		0.1	1.1
12	Total Manganese (mg/l)		<0.1	0.041		<0.1	0.016
13	Total Aluminum (mg/l)		<0.5	0.6		<0.5	1.0
14	Total Suspended Solids (mg/l)		<10	25		21	21
15	Total Hardness (mg/l as CaCO <sub>3</sub> )		100	120		50	120
16	Total Sulfates (mg/l)		21	16		33	20
17	Specific Conductivity (umhos/cm at 25°C)**		200	152		312	182
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.  
Address: RD #2 Box 227A, BattleRun Rd.  
City: Triadelphia State: WV Zip: 26059

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05/08  
DNR-744-9024

AEC 09715

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	D-11					
2	Lab ID No.	1008612	1006336	1005289			
3	Date Measured/Sampled	08/25/10	06-16-10	05/13/10			
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H			
5	Date Last Precipitation Event (if applicable)	08/22/10	06-15-10	05/12/10			
6	Static Water Level of Well below Land Surface (feet)*	--	--	--			
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	0.0002 cfs	0.001 cfs	0.006 cfs			
8	pH (Standard Units)	7.9	8.65	7.73			
9	Total Acidity (mg/l CaCO <sub>3</sub> )	2.3	2.3	ND			
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	120	110	160			
11	Total Iron (mg/l)	0.17	0.14	0.73			
12	Total Manganese (mg/l)	0.006	0.04	0.03			
13	Total Aluminum (mg/l)	0.37	0.19	1.10			
14	Total Suspended Solids (mg/l)	ND	ND	17			
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	201	140	190			
16	Total Sulfates (mg/l)	42.7	25.5	32.1			
17	Specific Conductivity (umhos/cm at 25°C)**	369	295	367			
18	Total Dissolved Solids (mg/l)**	--	--	--			

Laboratory Name: Tra-Det, Inc.  
Address: RD #2 Box 227A, BattleRun Rd.  
City: Triadelphia State: WV Zip: 26059

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NOTE: For each sample provide data for either item 17 or item 18.

05/08  
DNR-744-9024

AEC 09716

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	P-27.01			P-29.03		
2	Lab ID No.	NS	1006312	1005135	0808434	1006394	1005161
3	Date Measured/Sampled	08-17-08	06-16-10	05/05/10	08/12/08	06/17/10	05/06/10
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-14-08	06-15-10	05/04/10	08/04/08	06/16/10	05/04/10
6	Static Water Level of Well below Land Surface (feet)*	NA	--	NA	--	--	
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	--	13.0 gpm	0.14 cfs	No Flow	0.0001 cfs	0.001 cfs
8	pH (Standard Units)		8.50	9.81	7.67	10.05	8.01
9	Total Acidity (mg/l CaCO <sub>3</sub> )		8.3	0.00	2.9	2.5	2.5
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )		95	77	74	55	53
11	Total Iron (mg/l)		2.51	1.57	0.370	0.46	7.1
12	Total Manganese (mg/l)		0.48	0.48	0.421	0.14	0.271
13	Total Aluminum (mg/l)		1.36	281	0.080	0.36	10.58
14	Total Suspended Solids (mg/l)		24	0.00 <sup>Q</sup>	<6.7	26	212
15	Total Hardness (mg/l as CaCO <sub>3</sub> )		128	281	75.0	68	449
16	Total Sulfates (mg/l)		15.9	18.2	13.0	9.29	15.8
17	Specific Conductivity (umhos/cm at 25°C)**		368	383	727	132	164
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.  
Address: RD #2 Box 227A, BattleRun Rd.  
City: Triadelphia State: WV Zip: 26059

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NOTE: For each sample provide data for either item 17 or item 18.

05/08  
DNR-744-9024

AEC 09717

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	P-34.01			P-34.03		
2	Lab ID No.	0808301	1006415	1005075	0808302	1006476	1005076
3	Date Measured/Sampled	08/09/08	06/18/10	05/07/10	08/09/08	06/22/10	05/07/10
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-06-08	06/16/10	05/04/10	08/06/08	06/16/10	05/04/10
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	0.004 cfs	0.01 cfs	0.07 cfs	No Flow	0.0001 cfs	0.003 cfs
8	pH (Standard Units)	8.80	7.45	8.05	7.50	9.30	9.16
9	Total Acidity (mg/l CaCO <sub>3</sub> )	1.3	ND	0.00	3.6	ND	0.00
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	50	72	57	91	84	51
11	Total Iron (mg/l)	<0.02	0.21	0.15	0.42	0.34	0.26
12	Total Manganese (mg/l)	<0.004	0.04	0.00	0.551	0.06	0.09
13	Total Aluminum (mg/l)	<0.04	0.17	0.13	0.05	0.30	0.07 <sup>J</sup>
14	Total Suspended Solids (mg/l)	<10	ND	0.00	<6.7	ND	0.00
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	100	90	80	160	121	150
16	Total Sulfates (mg/l)	23.3	13.5	15.2	6.92	8.08	10.9
17	Specific Conductivity (umhos/cm <sub>1</sub> at 25°C)**		189	201	325	220	235
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

City: Triadelphia

State: WV

Zip: 26059

NOTE: If information required by item 6 is unobtainable, submit as an addendum to Hydrologic Analyses a statement giving the reasons why the information is unobtainable.

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05/08  
DNR-744-9024

AEC 09718

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	P-34.05			P-34.07		
2	Lab ID No.	0808303	1006517	1005068	0808304	1006516	1005072
3	Date Measured/Sampled	08/09/08	06/25/10	05/06/10	08/09/08	06/25/10	05/07/10
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08/04/08	06/24/10	05/04/10	08/04/08	06/24/10	05/04/10
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	No Flow	No Flow	0.002 cfs	No Flow	0.001 cfs	0.002 cfs
8	pH (Standard Units)	7.70	8.30	7.23	8.80	8.13	7.73
9	Total Acidity (mg/l CaCO <sub>3</sub> )	2.4	ND	7.2	0.52	ND	7.6
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	110	77	98	41	140	120
11	Total Iron (mg/l)	0.10	4.09	0.47	0.06	0.12	0.03 <sup>J</sup>
12	Total Manganese (mg/l)	0.260	0.11	0.09	0.019	0.09	0.00
13	Total Aluminum (mg/l)	<0.04	3.31	0.68	0.04	0.29	0.04 <sup>J</sup>
14	Total Suspended Solids (mg/l)	6.7	14	35	<6.7	ND	0.00
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	170	10	270	80	135	239
16	Total Sulfates (mg/l)	24.1	15.9	41.7	21.5	21.9	16.4
17	Specific Conductivity (umhos/cm at 25°C)**	571	163	581	185	437	416
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

City: Triadelphia

State: WV Zip: 26059

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05/08  
DNR-744-9024

AEC 09719

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	P-69.02			P-76.02		
2	Lab ID No.	0809027	1006397	1005167	0808654	1006310	1005184
3	Date Measured/Sampled	09-02-08	06/17/10	05/06/10	08-21-08	06-16-10	05/07/10
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	T for H	L	I	T for H
5	Date Last Precipitation Event (if applicable)	08-14-08	06/16/10	05/04/10	08-14-08	06-15-10	05/04/10
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	--	0.0001 cfs	0.017 cfs	--	NF	0.001 cfs
8	pH (Standard Units)	7.08	7.25	7.39	6.88	7.30	7.29
9	Total Acidity (mg/l CaCO <sub>3</sub> )	1.3	4.8	7.0	7.2	3.8	4.5
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )	27	28	30	32	28	35
11	Total Iron (mg/l)	1.1	0.96	3.7	1.4	0.71	0.95
12	Total Manganese (mg/l)	0.042	0.07	0.662	0.213	0.05	0.143
13	Total Aluminum (mg/l)	<0.04	0.10	0.33	0.48	0.33	0.18
14	Total Suspended Solids (mg/l)	<6.7	11	21	14	6.0	0.00
15	Total Hardness (mg/l as CaCO <sub>3</sub> )	130	40	170	80	49	60
16	Total Sulfates (mg/l)	7.5	9.89	10.3	9.3	4.47	7.03
17	Specific Conductivity (umhos/cm at 25°C)**	100	88.2	109	99.8	86.8	112
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

City: Triadelphia

State: WV

Zip: 26059

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05/08  
DNR-744-9024

AEC 09720

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15

1	ID No. Of Sampling Site From Hydrology Map	P-80.08			P-34.11		
2	Lab ID No.		1006398	1005166		0808305	
3	Date Measured/Sampled	08-22-08	06/17/10	05/06/10		08/09/08	
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	H	Supplemental		
5	Date Last Precipitation Event (if applicable)	08-14-08	06/16/10	05/04/10		08/04/08	
6	Static Water Level of Well below Land Surface (feet)*	--	--	--		--	
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	DRY	No Flow	NF	--	0.06 gpm	--
8	pH (Standard Units)	NS	7.59	7.73		7.90	
9	Total Acidity (mg/l CaCO <sub>3</sub> )		3.6	8.9		1.8	
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )		160	120		72	
11	Total Iron (mg/l)		0.30	0.63		0.25	
12	Total Manganese (mg/l)		0.55	0.220		0.221	
13	Total Aluminum (mg/l)		0.30	0.63		0.11	
14	Total Suspended Solids (mg/l)		6.0	15		15	
15	Total Hardness (mg/l as CaCO <sub>3</sub> )		204	229		90	
16	Total Sulfates (mg/l)		24.3	29.0		17.6	
17	Specific Conductivity (umhos/cm at 25°C)**		390	350		238	
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, BattleRun Rd.

City: Triadelphia

State: WV

Zip: 26059

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05/08  
DNR-744-9024

AEC 09721



# SURFACE WATER INVENTORY

D-0425-15 (Belmont County Mining Area) PG1

\* Do not include discharge values if such measurements are reported on the Hydrologic Analyses.

AEC 09722

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**HYDROLOGIC ANALYSES**

Applicant's Name: American Energy Corporation

D-0425-15 (Belmont County Mining Are

1	ID No. Of Sampling Site From Hydrology Map	U-10-9			D-10-10F		
2	Lab ID No.	--	0712286	0803398	--	0712279	0803308
3	Date Measured/Sampled	10/02/07	12/18/07	03/25/08	10/09/07	12/18/07	03/19/08
4	High (H), Low (L), Intermediate (I) (if applicable)	L	I	H	L	I	H
5	Date Last Precipitation Event (if applicable)	10/01/07	12/18/07	03/19/08	10/01/07	12/18/07	03/17/08
6	Static Water Level of Well below Land Surface (feet)*	--	--	--	--	--	--
7	Discharge for Spring, Stream, Pond, Mine, etc. (gpm or cfs)	DRY	0.26 cfs	0.39 cfs	DRY	0.03 cfs	0.11 cfs
8	pH (Standard Units)	10/09/07	7.72	8.05	10/11/07	7.93	7.88
9	Total Acidity (mg/l CaCO <sub>3</sub> )		1.9	0.93		<0.16	0.87
10	Total Alkalinity (mg/l CaCO <sub>3</sub> )		65	76		83	48
11	Total Iron (mg/l)		0.15	0.31		0.20	0.80
12	Total Manganese (mg/l)		<0.002	<0.002		<0.002	0.011
13	Total Aluminum (mg/l)		0.18	0.43		0.29	1.4
14	Total Suspended Solids (mg/l)		<0.87	2.0		<0.87	12
15	Total Hardness (mg/l as CaCO <sub>3</sub> )		70	90		100	70
16	Total Sulfates (mg/l)		28	29		30	21
17	Specific Conductivity (umhos/cm at 25°C)**		200	230		240	160
18	Total Dissolved Solids (mg/l)**	--	--	--	--	--	--

Laboratory Name: Tra-Det, Inc.

Address: RD #2 Box 227A, Battle Run Road

City: Triadelphia State: OH Zip: 26059-9609

**NOTE:** If information required by item 6 is unobtainable, submit as an addendum to Hydrologic Analyses a statement giving the reasons why the information is unobtainable.

**\*\* NOTE:** For each sample provide data for either item 17 or item 18.

05/08

DNR-744-9024

AEC 09723



# Ohio Department of Natural Resources

TED STRICKLAND, GOVERNOR

SEAN D. LOGAN, DIRECTOR

Date: April 12, 2010

## ANALYSIS OF EXISTING GROUND WATER FILE DATA

Prepared By: Kathy Sprowls, Hydrogeologist

A handwritten signature in black ink, appearing to be "K. Sprowls".

Operator: American Energy Corp.

County: Monroe

Township: Sunbury

Section(s): 6 and 12

Number of located water well logs within 1,000 foot radius of site (copies attached): 71 Field located: 6

### General description of local hydrology:

Ground water in the area is generally obtained from the alternating layers of sandstone, shale, limestone and coal at depths ranging from 40 to 130 feet. Yields from these wells vary from less than 1 to 12 gallons per minute.

### Areas of particular concern:

Mining the # 8 Pittsburgh coal seam at elevations of 700 to 740 feet could impact wells near the site. All wells should be located and monitored for any water quality and quantity changes due to mine subsidence in the area.

ohiodnr.com



AEC 09724

# WELL LOG AND DRILLING REPORT

ORIGINAL

WL-79.00

NO CARBON PAPER  
NECESSARY—

State of Ohio  
DEPARTMENT OF NATURAL RESOURCES  
Division of Water  
65 S. Front St., Rm. 815 Phone (614) 469-2646  
Columbus, Ohio 43215

No. 413083

SELF-TRANSCRIBING

County MANROE Township SUNSBURY Section of Township 6  
Owner ROGER HOOVER Address 140 OHIO ST. BARNESVILLE  
Location of property CHERRY RIDGE BARNESVILLE

## CONSTRUCTION DETAILS

Casing diameter 8 Length of casing 21  
Type of screen \_\_\_\_\_ Length of screen \_\_\_\_\_  
Type of pump \_\_\_\_\_  
Capacity of pump \_\_\_\_\_  
Depth of pump setting \_\_\_\_\_  
Date of completion 5-17-71

## BAILING OR PUMPING TEST (Specify one by circling)

Test Rate 4 G.P.M. Duration of test \_\_\_\_\_ hrs.  
Drawdown \_\_\_\_\_ ft. Date \_\_\_\_\_  
Static level-depth to water 76 ft.  
Quality (clear, cloudy, taste, odor) \_\_\_\_\_  
Pump installed by \_\_\_\_\_

## WELL LOG\*

Formations Sandstone, shale, limestone, gravel and clay	From	To
<u>Soil</u>	<u>0 Feet</u>	<u>1 Ft.</u>
<u>SANDSTONE</u>	<u>1</u>	<u>37</u>
<u>GRAY SHALE</u>	<u>37</u>	<u>39</u>
<u>LIMESTONE</u>	<u>39</u>	<u>45</u>
<u>WATER 48</u>		

## SKETCH SHOWING LOCATION

Locate in reference to numbered  
State Highways, St. Intersections, County roads, etc.

N.  
145  
W. E.  
CHERRY RIDGE  
↑ WELL  
S. BARNESVILLE

Drilling Firm BILTMAN DRILLING  
Address WOODSFIELD

Date 5-17-71  
Signed L. H. BILTMAN

\*If additional space is needed to complete well log, use next consecutive numbered form.

# WELL LOG AND DRILLING REPORT

ORIGINAL

PLEASE USE PENCIL  
OR TYPEWRITER  
DO NOT USE INK.

State of Ohio  
DEPARTMENT OF NATURAL RESOURCES  
Division of Water  
1562 W. First Avenue  
Columbus 12, Ohio

WL-91.00

Nº 281039

County Monroe Township Juniata Section of Township 145  
Owner Ronnie Lucas Address Beallsville Ohio  
Location of property in town off Beallsville Ohio

## CONSTRUCTION DETAILS

## BAILING OR PUMPING TEST

Casing diameter 6 5/8 Length of casing 22 ft Pumping Rate 8 G.P.M. Duration of test 8 hrs.  
Type of screen Length of screen Drawdown Bottom ft. Date March 6, 64  
Type of pump Static level-depth to water 30 ft.  
Capacity of pump Quality (clear, cloudy, taste, odor) Clear  
Depth of pump setting Pump installed by Owner  
Date of completion March 6, 1964

## WELL LOG

## SKETCH SHOWING LOCATION

Formations  
Sandstone, shale, limestone,  
gravel and clay

From

To

Locate in reference to numbered  
State Highways, St. Intersections, County roads, etc.

Yellow sand  
Blue shale  
Gray shale

0 Feet 20 Ft.

30 40

40 65

Water at 30 ft

W.

E.

N.

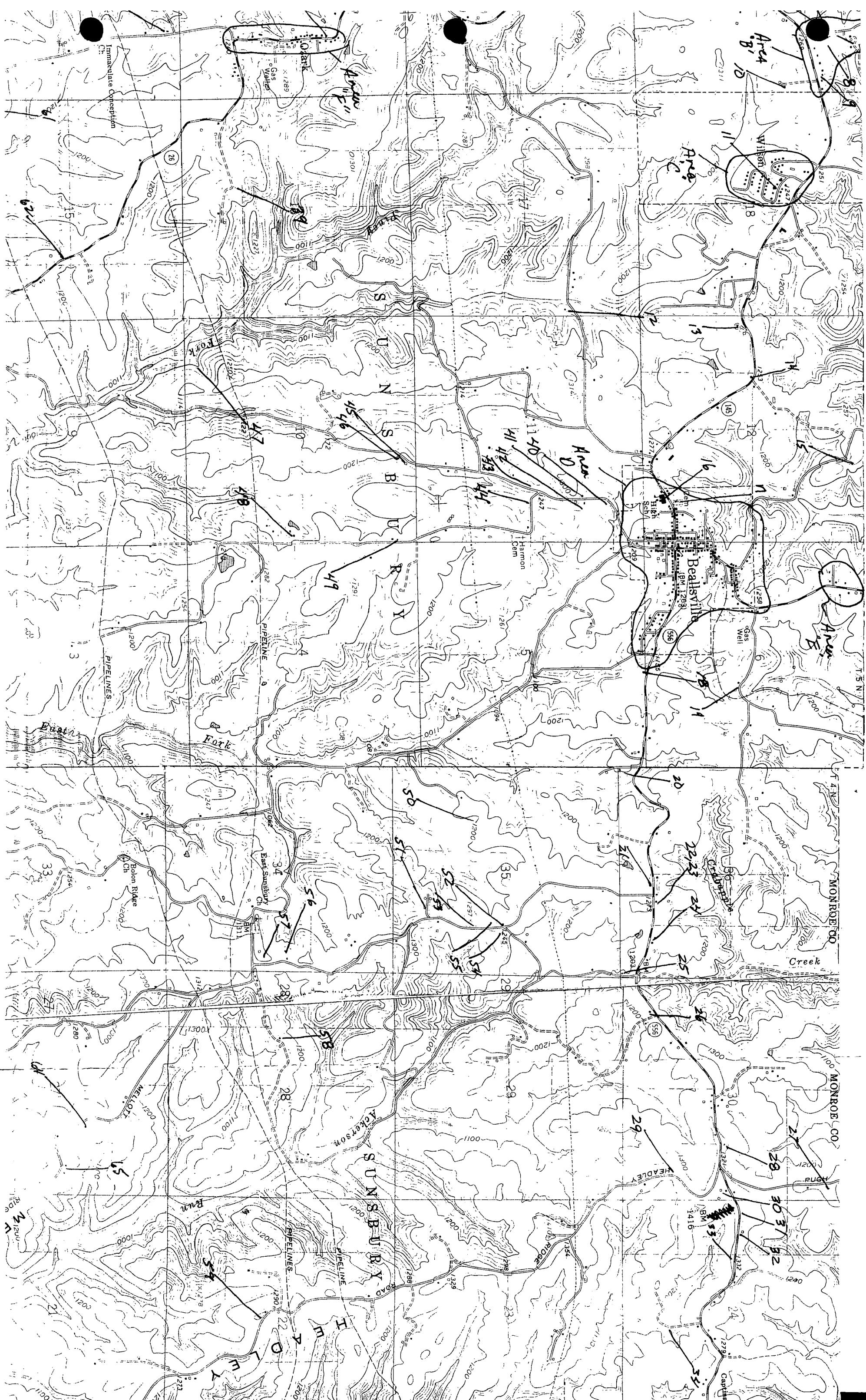
S.

See reverse side for instructions

Drilling Firm Glenn E. Warrick  
Address 502 North 4th Beallsville D

Date March 6, 1964  
Signed Glenn E. Warrick

AEC 09726



-- NOTE --

LD	=	Limited Domestic Use (Used to water garden, yard, etc., wash autos, and can be used as backup domestic water supply)
LR	=	Return Well for Geothermal Heat Pump
CU	=	Commercial/Industrial/Business Use
PU	=	Public Use (supplies water to a public building)( <u>NOT A PUBLIC WATER SUPPLY</u> )
AU	=	Agricultural Use
AUB	=	Backup Agricultural Use (Used in Emergencies Only)
AL	=	Limited Agricultural Use (Livestock being pastured in fields adjoining this spring, stream or impoundment, may drink water from this spring, stream or impoundment)
DU	=	Domestic Use
DM	=	Domestic water supply, used by multiple dwellings ( <u>NOT A PUBLIC WATER SUPPLY</u> )
DUB	=	Backup Domestic Use (Used in Emergencies Only)
H	=	High Flow Sample
I	=	Intermediate Flow sample
L	=	Low Flow Sample
M	=	Measured
N	=	Item can not be measured
P	=	One Time Sample, Submitted for background information only.
Q	=	Landowner would not allow measurement.
R	=	Information not available, landowner would not allow measurement.
S	=	Information obtained from well driller.
T	=	Information obtained from Well Log.
V	=	Information obtained from landowner, reported data.
W	=	Information not available
WW	=	Hand driven shallow well with centrifugal pump attached. Can not be measured without removing pump and losing prime on well.
X	=	Piston pump located on well and could not be removed for measurement.
XX	=	Well cap or plug could not be removed for measurement
Y	=	Blockage encountered in well, cannot be measured.
YY	=	Concrete cover on well that could not be removed for measurement or well locked.
Z	=	Well located under building, buried underground, or sealed in casing or well pit; Not accessible for measurement.
ZZ	=	Well no longer used, not accessible for measurement.
ZZZ	=	Well plugged or filled in.
-	=	Below detectable limits
***	=	Owner uses water softener, sampled after water softener.
??	=	Unknown
NA	=	Not Applicable
NR	=	Not Required

Addendum to Hydrologic Inventory  
American Energy Corporation  
Precipitation Data

July

11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	1.17
21	0.15
22	0
23	0
24	0
25	0
26	0
27	0
28	0
29	0
30	0.15
31	0.01

August

1	0.05
2	0
3	0.01
4	0.06
5	0
6	0
7	0
8	0
9	0

---

1.6" Total Precip.

1<sup>st</sup> 2 weeks of August Transition Flow Period.



Addendum to Hydrologic Inventory  
American Energy Corporation  
Precipitation Data

February

12	0.25
13	0.38
10	0
9	0.09
8	0
7	0
6	0
5	0
4	0
3	0
2	0.01
1	0

January

31	0
30	0.01
29	0.02
28	0.42
27	0.83
26	0.25
25	0.03
24	0
23	0
22	0
21	0
20	0
19	0
18	T
17	0.04
16	0
15	0
14	0.06

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2.39" Total Precip.

1<sup>st</sup> 2 weeks of February Transition Flow Period

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CENTURY MINE  
2010 RAINFALL

AMERICAN ENERGY CORP.  
CENTURY MINE - ALLEDONIA STATION  
RAINFALL 2010

RAINFALL AS OF: 06/22/10

DATE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1	0.01	0.00	0.00	0.00	0.15	0.00							
2	0.01	0.00	0.00	0.00	1.77	0.44							
3	0.02	0.00	0.00	0.00	0.00	0.02							
4	0.11	0.00	0.00	T	0.00	0.00							
5	0.00	0.55	0.00	0.10	0.06	3.00							
6	T	0.67	0.00	0.00	0.00	0.63							
7	0.17	0.00	0.00	0.00	0.04	0.00							
8	0.00	0.00	0.00	0.22	0.00								
9	0.00	0.35	0.00	0.00	0.00								
10	0.00	0.03	0.00	0.00	0.69								
11	0.00	T	0.00	0.00	0.15								
12	0.00	T	0.00	0.00	0.00								
13	0.00	T	0.00	0.00	0.00								
14	0.00	T	0.57	0.01	0.00								
15	0.00	0.23	0.01	0.00	0.00								
16	0.00	0.07	0.00	0.21	0.22								
17	0.24	0.00	0.00	0.00	1.33								
18	0.26	0.00	0.00	0.00	0.12								
19	T	0.00	0.00	0.00	0.03								
20	0.00	0.00	0.00	0.00	0.00								
21	0.00	0.00	0.33	0.00	0.00								
22	0.00	0.00	0.51	0.00	0.49								
23	0.01	0.00	0.02	0.03	0.00								
24	1.45	0.05	0.00	0.00	0.00								
25	0.04	0.01	0.76	0.36	0.00								
26	0.01	0.00	0.00	0.21	0.00								
27	0.08	0.00	0.00	0.00	0.00								
28	0.00	0.00	0.35	0.00	0.00								
29	0.00		0.00	0.00	0.00								
30	0.00		0.00	0.00	0.00								
31	0.00		0.00		0.47								
TOTAL	2.41	1.96	2.55	1.14	5.52	4.09	0.00	0.00	0.00	0.00	0.00	0.00	17.67
H/L	L	L	L	L	H	H	L	L	L	L	L	L	L

Rain gauge is read at 7:00 am for the prior day.

H/L compares the monthly rainfall with the 50 year average for this area

## **PART 3: RECLAMATION AND OPERATIONS PLAN**

### **A. GENERAL REQUIREMENTS**

- (1) Describe the type and method of coal mining procedures.

**Full Coal Recovery, longwall Mining Method with Room & Pillar development.  
See Addendum to Part 3, A(1)**

- (2) Describe the proposed engineering techniques to be used in this mining operation.

See Addendum to Part 3, Item A(2)

- (3) Anticipated annual production of coal: **605,909 (Beallsville) 13,200 (Belmont Area)** tons  
Anticipated total production of coal: **605,909(Beallsville) 13,200 (Belmont Area)** tons

- (4) List the major pieces of equipment to be used for all aspects of the operation.

**Longwall Shearer, Shields, Face Conveyor, Continuous Miner, Roof Bolters, Shuttle Cars, Scoop Cars, Tail Piece, Crusher, and Belt. (Beallsville)**

**Continuous Miner, Roof Bolters, Shuttle Cars, Scoop Cars, Tail Piece, Crusher, and Belt. (Belmont Area)**

- (5) Will access to the underground workings be gained through a drift entry?

Yes ☐ No ☒ If "yes," describe the location of the entry relative to the highest elevation of the coal reserve.

- (6) For entries to underground workings other than drift entries, describe the location of the entry relative to the coal reserve.

**Beallsville: AEC anticipates accessing the coal reserve by creating entries from the existing D-0425-14 mine to the northwest at ~1240' surface elevation vs ~720' coal elevation and D-0425-3 mine to the southeast at ~1260' surface elevation vs ~695' coal elevation. See Addendum to Part 3, A(2), Main Entry Development - Longwall Access**

**Belmont Area: AEC needs to extend the mains from the northeast portion of D-0425-12 Adjacent Area at ~1200' surface elevation vs ~650' coal elevation, for ventilation purposes during the mining of the northern longwall panel in that Adjacent Area. This extension of mains will then serve to connect the next proposed coal reserve application area to be submitted in the near future. See Addendum to Part 3, A(2), Main Entry Development - Room and Pillar Mining**

### TYPE OF MINING METHODS

#### Monroe County/Beallsville Mining Area

Mining to be conducted within the limits of the proposed adjacent area, D-0425-15, Beallsville area, shall primarily utilize the longwall method. Machinery and equipment used for this type of mining is listed in Part 3, Item A(4).

The Century Mine is an operation that uses the longwall method as its primary method of mining. The Room & Pillar method is used for development and access to these panel areas. While continuous miners are used for these development entries, they are not considered production sections. This mining method maximizes the recovery of the reserve by leaving coal only in the remaining pillars in the development entries (main and gate entries) and barrier pillars to protect the main entries.

The mining will progress from existing travelways in the adjacent D-0425-3 and D-0425-14 underground mine areas to this application area through main entries that will carry the ventilation air currents and contain the haulage entries. These main entries will branch down into the gate entries that will surround and outline the longwall panel. These mining units are considered part of the longwall mining to be conducted at the Century Mine. Full coal recovery (Longwall mining) methods are planned for most of the application area.

The approximate timing for the mining operations within this proposed adjacent area is shown on the Timing, Structure Contour, Coal Deed Map, Addendum to Part 4, Item B.(1). This method of permitting will allow for any changes in the mine plan which may be caused by unforeseen geologic conditions, production demand changes, or any other problems which may arise during the underground mining operations.

#### Belmont County Mining Area

Mining to be conducted within the Belmont County area of the permit shall utilize the room and pillar method. Machinery and equipment used for this type of mining is listed in Part 3, Item A(4). AEC needs to extend the mains from Adjacent Area D-0425-12, for ventilation purposes during the mining of the northern longwall panel in that Adjacent Area. This extension of mains into this proposed application area will then serve to connect the next proposed coal reserve application area to be submitted in the near future. The Room & Pillar method is used for development using continuous miners and support equipment.

The mining will progress from existing travelways in the adjacent D-0425-12 underground mine to this application area through the continuation of main entries that will carry the ventilation air currents and contain the haulage entries. The approximate timing for the mining operations within this proposed adjacent area is shown on the Timing, Structure Contour, Coal Deed Map, Addendum to Part 4, Item B.(1). This method of permitting will allow for any changes in the mine plan which may be caused by unforeseen geologic conditions, production demand changes, or any other problems which may arise during the underground mining operations.

Current Capacity for coarse refuse available at the Coarse Coal Refuse site on AEC Permit D-0425-2:

**17,004,832 tons**

Coarse Refuse Coal waste to be generated by D-0425-15 application:

**185,973 tons**

Note: Calculations based on using 40% plant reject with 3:1 coarse to fines (75% coarse coal)

<b>D-0425-15 Permit Beallsville 2 Area</b>			
ROM Coal Tons	Clean Tons 60%	Total Reject	Coarse Refuse To site
619,909	371,945	247,964	185,973

Current Capacity for slurry available at Ohio Valley Coal Company No. 2 Dam:

**9,106,012 tons**

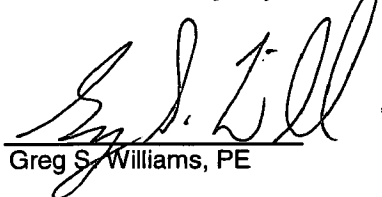
Coal slurry to be generated by D-0425-15 application:

**61,991 tons**

Note: Calculations based on using 40% plant reject with 3:1 coarse to fines (25% coal fines)

<b>D-0425-15 Permit Beallsville 2 Area</b>			
ROM Coal Tons	Clean Tons 60%	Total Reject	Slurry 3:1
619,909	371,945	247,964	61,991

The coarse refuse generated by AEC collective permits D-0425 goes to the Coarse Coal Refuse site on AEC Permit D-0425-2. The coal slurry generated by AEC collective permits D-0425 goes to the Coal Slurry Refuse Impoundment at Ohio Valley Coal Company No. 2 Dam. The coal slurry generated by OVCC collective permits D-0360 also goes to this Coal Slurry Refuse Impoundment. The current remaining capacity of the Coarse Coal Refuse site on AEC Permit D-0425-2 and Coal Slurry Refuse Impoundment at Ohio Valley Coal Company No. 2 Dam is adequate to contain the refuse generated by the remaining raw coal projected to be mined by all currently issued Mining Permits as outlined respectively. Coarse Refuse generated by OVCC permits D-0360 go to building the Ohio Valley Coal Company No. 2 Dam of the Coal Slurry Impoundment.

  
Greg S. Williams, PE

12/22/10  
Date



**OVCC D-360-23 Permit Mains and Gates and Panels**

Mining Area SF	Coal Height	CF	LBS @ (LBS/CF) 85	Raw Tons (Pounds/ton) 2000	Clean Tons @ Plant Reject 68.50%	Total Refuse Reject	Slurry Tons @ 25.00%	Coarse Refuse Tons To Site
84,429,066 1,938.22	4.25 AC	358,823,529	30,500,000,000	15,250,000	10,446,250	4,803,750	1,200,938	3,602,813

**D-425-9 Permit South Long Wall Mining**

Mining Area SF	Coal Height	CF	LBS @ (LBS/CF) 85	Raw Tons (Pounds/ton) 2000	Clean Tons @ Plant Reject 50.00%	Total Refuse Reject	Slurry Tons @ 25.00%	Coarse Refuse Tons To Site
1,834,385 42.11	4.25 AC	7,796,136	662,671,567	331,336	165,668	165,668	41,417	124,251

**D-425-10 Permit North Peavine Mains and Gates**

Mining Area SF	Coal Height	CF	LBS @ (LBS/CF) 85	Raw Tons (Pounds/ton) 2000	Clean Tons @ Plant Reject 70.00%	Total Refuse Reject	Slurry Tons @ 25.00%	Coarse Refuse Tons To Site
681,079 15.64	6 AC	4,086,475	347,350,392	173,675	121,573	52,103	13,026	39,077

**D-425-12 Permit North Peavine Mains and Gates and Panels**

Mining Area SF	Coal Height	CF	LBS @ (LBS/CF) 85	Raw Tons (Pounds/ton) 2000	Clean Tons @ Plant Reject 70.00%	Total Refuse Reject	Slurry Tons @ 25.00%	Coarse Refuse Tons To Site
43,774,315 1,004.92	6.25 AC	273,589,470	23,255,104,977	11,627,552	8,139,287	3,488,266	872,066	2,616,199

**D-425-14 Permit West Beallsville**

Mining Area SF	Coal Height	CF	LBS @ (LBS/CF) 85	Raw Tons (Pounds/ton) 2000	Clean Tons @ Plant Reject 62.00%	Total Refuse Reject	Slurry Tons @ 25.00%	Coarse Refuse Tons To Site
18,414,329 422.73	5 AC	92,071,644	7,826,089,766	3,913,045	2,426,088	1,486,957	371,739	1,115,218

**D-425-15 Permit Beallsville #2**

SF	Coal Height	CF	LBS @ (LBS/CF) 85	Raw Tons (Pounds/ton) 2000	Clean Tons @ Plant Reject 60.00%	Total Refuse Reject	Slurry Tons @ 25.00%	Coarse Refuse Tons To Site
2,917,220 66.97	5 AC	14,586,100	1,239,818,500	619,909	371,946	247,964	61,991	185,973

All Remaining permits to be mined=	21,670,811	10,244,707	2,561,177	7,683,530
------------------------------------	------------	------------	-----------	-----------

**Remaining Refuse Capacity Available (Volume in tons)**

Coarse Refuse Tons @ AEC D-0425-2 17,004,832

**Projected Refuse in Permits (Volume in tons)**

Total Coarse Refuse Tons to AEC D-0425-2 7,683,530

Slurry Refuse Tons @ OVCC Dam No.2= 9,106,012

Total Slurry Refuse Tons to OVCC Dam No.2= 2,561,177

### ENGINEERING AND MINING TECHNIQUES

For those areas mapped as longwall areas, the engineering and mining techniques for longwall mining are as follows:

#### Longwall Mining

1. Longwall mining removes long rectangular panels of coal that are 600 to 1150 ft wide and a maximum of approximately 15,000 ft. long. A longwall shearer, a double-drum machine, removes the panel by cutting slices of coal along the width of the face. The roof is temporarily supported by hydraulic supports called shields. The shields are moved forward each time that a slice is cut from the face. The coal is transported from the face by an armored, chain conveyor to the gate entry where it is transported to the main conveyor for removal from the mine.

The roof behind the shields is allowed to collapse. Surface subsidence on the order of approximately 69 percent of the mining height occurs when the roof falls.

2. The longwall face is outlined by three or four entries on each side called gate entries, on the end where the panel starts by several entries called bleeder entries, and on the panel end by the main entries or by recovery rooms (entries developed to remove the longwall mining equipment). These entries are developed using a continuous miner, shuttle cars, and roof bolters. Pillars and concrete block stoppings separate each entry from the next. These entries provide ventilation and belt haulage for the longwall mining section, with a maximum recovery of less than 50 percent of the coal. Coal pillars between the longwall panels crush after both adjacent longwall panels are extracted. Subsidence of the surface occurs over these panels and pillars during longwall mining as a result of the pillars crushing and from the extraction of both adjacent longwall panels. These areas are considered as full recovery mining areas. The development gate entries, utilizing room and pillar mining between the panels, are considered and calculated to be within the full recovery mining area acreage as they are included within the angle of draw for subsidence. This allows flexibility in adjusting the mains and gates as plans and conditions dictate. Room & pillar areas along the boundary of the shadow area where they do not border existing shadow area for longwall mining are not included in the full recovery mining area but are included in the Partial Coal Recovery Area.

#### Main Entry Development - Longwall Access

3. This proposed area is needed to allow the mining of a full longwall panel which will straddle the southern boundary of D-0425-14 and the northern boundary of D-0425-15. There will be one set of gate entries driven west extending from the main entries of the D-0425-3 Adjacent Area bounding the southern side of the panel. The

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PERMIT D-0425-12  
ADDENDUM TO PART 3, A(2)

western side or end of the panel will be accessed by extending gate entries to the south from D-0425-14. The gate entries consist of approximately four entries, driven with continuous miners and are primarily used for ventilation, transportation of men and materials, and haulage. These entries are designed for long-life with the pillars providing roof support. The maximum recovery factor for mains and sub mains is below 50 percent and is much less if one considers the barrier blocks left in place at the approaches to butt and longwall sections. These are included in the Partial Coal Recovery Area.

Main Entry Development - Room and Pillar Mining

1. In general, Room and Pillar Mining consists of making parallel cuts with cross cuts between the parallel sections. This method uses a continuous miner with a single cutting drum to cut the coal from the seam. The roof is supported by bolts into the overhead strata. The coal is transported by shuttle cars to the conveyor, at which point it is removed from the mine.

4. There will be one set of main entries driven in a slightly northeasternly direction extending from the main entries of the D-0425-12 Adjacent Area. The main entries consist of approximately seven entries, driven with continuous miners and are primarily used for ventilation, transportation of men and materials, and haulage. These entries are designed for long-life with the pillars providing roof support. The maximum recovery factor for mains and sub mains is below 50 percent and is much less if one considers the barrier blocks left in place at the approaches to butt and longwall sections. These are shown as the Partial Coal Recovery Area.



- (7) Are the entries in (6) located so as to eliminate the potential for a gravity discharge?  
Yes ☒ No ☐ If "no," the applicant must demonstrate the following:

- (a) The coal seam is not acid or iron producing. Provide an analysis of the strata immediately above and below the coal, and the coal seam itself, sufficient to demonstrate that the water quality from the entry will meet effluent limitations without treatment.

Or,

- (b) How the water will be treated to meet effluent limitations and provisions will be made for consistent maintenance of the treatment facility throughout the anticipated period of gravity discharge

- (8) Will the permanent entry seals be designed to withstand the maximum anticipated hydraulic head when the operations are abandoned?

Yes ☒ No ☐ If "yes," submit the appropriate information demonstrating that this will be accomplished. If "no," provide a typical plan for the seals to be used to close the mine entries pursuant to applicable state and federal regulations.

- (9) Submit Performance Security Estimate providing an estimate of the reclamation cost on the proposed operation.

- (10) Will the proposed mining operations be within 25 feet of any known oil or gas well?

☒ Yes ☐ No If yes, submit a variance request as an addendum to this item.

- (11) Will the proposed operation include return of slurry or other mine waste or material into the abandoned underground workings?

Yes ☐ No ☒ If "yes," comply with provisions contained in paragraph (N) of rule 1501:13-4-14 and paragraph (Q) of 1501:13-9-04 of the Administrative Code, and submit copies of the required MSHA approvals as an addendum.

## **B. RECLAMATION PLAN – GENERAL REQUIREMENTS**

- (1) Describe the plan for minimizing to the extent possible and using the best technology currently available disturbances and adverse impacts of the operation on fish and wildlife and related environmental values, including compliance with the Endangered Species Act, and achieving enhancement of such resources where practical.

**See Addendum to Part 3 Item B (1)**

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PERMIT D-0425-15  
ADDENDUM TO PART 3, A(8)

Mining this area will not result in any discharge to the surface. Permanent mine seals will be installed at shaft locations when the mine closes. There are no shafts proposed within this application shadow area. Therefore permanent entry seals are inappropriate for the D-0425-15 Application Area, as none are projected to be installed.

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PERMIT D-0425-15  
ADDENDUM TO PART 3, A(9)

The Performance Security Estimate (PSE) is driven by the Mine Plan Summary. Since there are no surface changes proposed in this application, there will be no changes in the Mine Plan Summary because this application is for the continuation of underground mining for permit D-0425. However, the PSE for the surface operations is up to date.

AMERICAN ENERGY CORP.  
CENTURY MINE  
PERMIT D-0425-15  
ADDENDUM TO PART 3, A(10)

In order to comply with O.R.C. 1563.111, the Applicant will contact the Division's Mine Safety Section requesting permission from the Chief to mine within 25' of any oil or gas well within the proposed permit limits. The wells within the permit limits are listed below and shown on the application map.

It is planned that all currently active wells to be mined through will first be plugged with the permission of the well owner. Refer to the table below for a summary of wells whose locations are recorded or indicated to be within the proposed shadow area. For the wells identified as being located, records at the Division of Mineral Resources Management will be reviewed to determine if the well was appropriately plugged per the ODNR standard well abandonment procedure. If it is found that the well was not appropriately plugged, the operator will verify the owner of the well, and subsequent to obtaining a plugging permit, appropriately plug the well with neat cement; thereafter mining will proceed. If the well cannot be located at its recorded location, and is inadvertently intercepted by mining, an honest effort will be made immediately to plug the well with neat cement.

The proposed mining operation will maintain safe operating practices in any work involving areas near encountered gas wells. Work shall be done in order to ensure the safety of people, livestock, fish and wildlife and machinery in the mine.

SITE I.D.	TYPE	TWP	LOCATION/SECTION	FIELD LOCATED (Y/N)	MINE STATUS
64122	Dry Hole	SUNSBURY	NW1/4 SEC. 12	Yes	Mine Through
21150	Dry Hole	SUNSBURY	NW1/4 SEC. 6	Yes	Mine Through
21163	Plugged Gas Well	SUNSBURY	NW1/4 SEC. 6	Yes	Mine Through
21170	Dry Hole	SUNSBURY	NW1/4 SEC. 6	Yes	Mine Through
64133	Producing	SUNSBURY	NE1/4 SEC. 6	Yes	Mine Through
64134	Producing	SUNSBURY	NE1/4 SEC. 6	Yes	Mine Through

ADDENDUM TO PART 3, ITEM B(1)  
AMERICAN ENERGY CORPORATION  
CENTURY MINE  
PERMIT D-0425-15

RECLAMATION PLAN - FISH, WILDLIFE, ENVIRONMENTAL VALUES

The proposed longwall mining operation in the Beallsville area is not expected to impact fish, wildlife, and other related environmental values. Minnows have been found in some of the larger stream segments within the application area. However, the normal annual cycle shows that during the summer and fall months, when the stream flow is minimal, the minnows swim downstream, only to return again. Observations show that stream segments that go dry following subsidence have returned to near their normal flow, and will again support minnows. The larger streams will return to normal flow faster than smaller streams because more sediment is carried in larger streams and help fill any residual cracks that may be found. There are several ponds overlying the application area, and larger fish live in them. Our experience at the CENTURY MINE is that ponds are not greatly influenced by subsidence due to the amount of cover. Wildlife has never been shown to be affected by longwall mining. If surface slips are caused by mining activities, over the mining area, AMERICAN ENERGY CORPORATION will restore the land to a condition equal to its original value and reasonably foreseeable use. Undeveloped springs that are found above the application area may be dewatered and usually reposition themselves downstream. AEC will replace undeveloped springs if they are legitimately used according to our water replacement plan outlined in Addendum to Part 3 C(3).

There is no anticipated surface disturbance for the area in Belmont County as it is just a room and pillar entries extension.

## **C. RECLAMATION PLAN-PROTECTION OF HYDROLOGIC BALANCE**

- (1) Based on the baseline data submitted in response to Part 2, items B, C, D and other submitted information in this application, describe the probable hydrologic consequences of this proposed underground mining operation on the hydrologic regime of the proposed shadow area and adjacent areas. The description shall include findings on each of the following items:
- (a) The consequences of the proposed operation on the contents of dissolved and total suspended solids, total iron, total manganese and pH;
  - (b) Whether adverse impacts may occur to the hydrologic balance;
  - (c) The impact the proposed operation will have on:
    - i) Sediment yield from the disturbed area,
    - ii) Acidity, total suspended and dissolved solids and other important water quality parameters of local impact,
    - iii) Flooding or stream-flow alteration, ground water and surface water availability.

**See Addendum to Part 3 Item C (1) as applied to the mining area at Beallsville.**

**For the mining area in Belmont County, there should be no anticipated hydrologic consequences associated with this application area since it is very small and there is no subsidence anticipated from the proposed room and pillar mining. There are no known hydrologic sites or sources of used water supplies within the shadow area.**

- (2) Describe the measures to be taken during and after the proposed underground mining operations to minimize disturbance to the hydrologic balance, including quality and quantity, within the permit and adjacent areas, to avoid acid or toxic drainage, and to prevent material damage outside the permit area.

**See Addendum to Part 3 Item C (2) as applied to the mining area at Beallsville.**

**There should not be any surface disturbance in the mining area in Belmont County since it is room and pillar for entries extension. There are no known hydrologic sites or sources of used water supplies within its shadow area. Since there should be no anticipated hydrologic consequences associated with this application area, no special measures will be taken there.**

**RECLAMATION PLAN-PROTECTION OF HYDROLOGIC BALANCE**

- 1)(a) The proposed longwall mining operation should have no impacts on the contents of total suspended solids, dissolved solids, acidity, or pH. Some of the wells located within the proposed permit area may exhibit increases in iron, manganese, and hardness post-mining operation. Some springs within the proposed mining permit may exhibit increased iron, manganese, and hardness post-mining. These increases are typically temporary and do not persist for a period longer than one year. The quality of the surface and ground water in the application area is not expected to be altered long term as a result of the proposed mining activities. The levels of pH, iron, manganese, total suspended solids, total suspended solids, and total dissolved solids are not expected to vary from the levels indicated in the submitted hydrologic inventory. However, these levels may temporarily be altered during and post mining.
- (b) Aquifers in the proposed mining area strata normally have low yields and are less susceptible to mine subsidence fracturing. If fracturing should occur, the fractures will tend to close in response to lithologic pressures or be plugged by fine grain sediments containing clay that will swell when exposed to water. There is also vertical and horizontal variability in the rock strata. Rapid facies and hydrologic property changes limit the horizontal continuity of individual rock units. With the exception of persistent coal seams, few lithologic units are continuous across the proposed permit area. All of these factors tend to enhance the importance of localized flow systems. Most available ground water in this region is limited to the first 100' of the surface where enhanced permeability associated with rock fracturing is present. Ground water recharge in the upper ridge and ridge top areas of the site result in downward water migration within this shallow saturated zone. Due to topographic relief exceeding 100 feet between ridge tops, localized flow systems under the ridge tops are not hydrologically connected with adjacent ridge tops. Ground water under any ridge top can be considered continuous, but not across to other ridge tops. The overall hydrologic regime may be affected and some individual sources of water may be permanently disrupted and require replacement. Should a supply become affected by the mining operation, the supply will be appropriately supplemented by American Energy Corp. at the company's expense by connecting the water user to a temporary water supply such as a portable water tank until it is deduced that the original water supply has been permanently lost. If permanent loss is verified the water user will then at the company's expense be connected to a permanent source such as an available public water supply. Should a supply become affected by the mining operation, the supply will be supplemented by American Energy Corp. at the company's expense by connecting the water user to another water supply.

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Some changes in general water table levels and repositioning of hillside springs may result. Static water levels of ground water users in the proposed shadow and adjacent areas may be affected. Many ground water supplies are permanently disrupted and therefore require replacement. Based on water bearing strata located in the test holes and field observations and sampling of developed water supplies, several aquifer zones have been identified and estimated in the proposed permit area. These aquifer zones can be located in the Ground Water Description in Part 2 Section C.

- c)(i) No impact to sediment yield will occur as a result of the proposed longwall mining operation.
- c)(ii) Refer to Addenda to Part 4, B(5)(b) and (c)
- c)(iii) Refer to Addenda to Part 4, B(5)(b) and (c)



ADDENDUM TO PART 3, ITEM C(2)  
AMERICAN ENERGY CORPORATION  
CENTURY MINE  
PERMIT D-0425-15

RECLAMATION PLAN - PROTECTION OF HYDROLOGIC BALANCE

The hydrologic balance is expected to change as shown below as a result of the proposed longwall mining operation in the long term. Temporarily, the depth below the surface of ground water will increase as a result of increasing the number of cracks in the local rock units. The static level of the ground water should re-establish itself, usually at a lower elevation, within 18 months to 2 years after mining. At that time, ground water will be available in quantity at least as great as before mining. Because of increased porosity due to the cracking caused by longwall mining, the quantity of ground water that is available to users will probably increase. Minor surface cracking over longwall areas will eventually heal or be repaired, causing the ground to capture approximately the same percentage of rainfall as before. It is anticipated that stream flow in selected sections of first order streams where overburden thickness exceeds 200 ft may be temporarily reduced over relatively short stream segments. This impact is anticipated due to the fact that the headwaters of streams occasionally relocate to lower elevations following subsidence that results in the de-watering of hillside/hilltop springs. Should perennial streams become depleted above the mine, minor fieldwork will be done to re-establish the flow gradient as needed. This work will be done within two years after mining if the stream flow has not been established naturally. The monitoring data obtained for the ground and surface water sources over the longwall areas at the Powhatan No. 6 Mine indicate there will be no lasting deleterious effects of the longwall mining on water quality. Therefore, the hydrologic balance outside the proposed shadow area will be protected.

The rights of present users of surface and ground water will be maintained through the water replacement plan found in the Addendum to Part 3, Item C(3). It is anticipated that within two years, ground water will re-establish itself so that wells and springs can be replaced. The proposed longwall mining operation should not cause long-term irreparable impacts to surface water drainage, particularly streams.

Acid or toxic drainage are not expected to be a problem at the Century Mine. Based on experience at another local underground mine (Powhatan No. 6 Mine), if the mine does discharge, the water is expected to meet effluent limitations. Acid or toxic drainage is not expected to enter the waters of the State.

## **ALTERNATIVE WATER SUPPLY INFORMATION**

### **1. INTRODUCTION**

AEC will comply with all legal requirements when required to effect water replacement per ORC 1513.162 AND OAC 1501:13-9-04 (P). Notwithstanding its mining rights and without waiving any of its mining rights, where such diminution or interruption results from its mining, American Energy Corporation will repair or install a replacement source in the adjacent area to a level sufficient to meet the pre-mining quantity and quality levels of a legitimate water supply which will be determined by monitoring information gathered in accordance with the Monitoring Plan.

The Probable Hydrologic Consequences (PHC) narratives contained in response to Part 3, C(1) of this application indicate a potential for diminution and/or interruption of ground water and surface water supplies in areas above and contiguous to full recovery mining operations. Past experience indicates that the majority of subsidence (that detectable with surveying equipment) is complete within about 10-14 days after the longwall passes under the area. Water losses generally occur within that time period. For potential ground water supplies that could be affected refer to the Ground Water Inventory under Part 2, C(2) where sites are identified with "+" under "Known Uses". For potential surface water supplies i.e. ponds, that could be affected refer to the Surface Water Inventory under Part 2, D(2) where sites are identified with "+" under "Known Uses". The criteria for potential affectment of a ground water supply is whether it falls within 500 feet of the longwall panel as defined in Part 3, D.

Some used supplies are located within adjacent shadow areas of D-0425-3 and D-0425-14 which overlap the proposed application hydro boundary. In general, sites DS-101, DS-152A, and W-181A are presently outside of our 600' monitoring boundary for our landowner monitoring program for D-0425-14, nor are they within a subsidence area for D-0425-3. That area is over a development area of main entries, gate entries and barrier pillars where subsidence is not anticipated and should not occur. Therefore, they are not currently being monitored. However they will now fall within the potential affectment boundary of this application. Therefore they will be added to the monitoring program for this application.

Sites DS-29.00, DS-34.04, DS-34.06, DS-34.09, DS-34.14, DS-34.15, and W-35.00 are all currently being monitoring under D-0425-14 with our landowner monitoring program. At the time of this application, none of these sites have been affected.

No long-term contamination of such water supplies is expected; however, short-term quality impacts are possible, as addressed in the PHC narratives. Nevertheless, if the Division finds that mining has resulted in contamination of any used, legitimately water supply, it will be replaced in the manner set forth below.

### **2. NOTIFICATION OF IMPACT BY COMPLAINANT**

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If a water user believes that his or her underground or surface water source has been contaminated, diminished, or interrupted as a proximate result of the mine's operation, he or she should notify the Division's appropriate district office or AEC by calling (614) 926-9152. AEC will make a determination of liability no later than sixty (60) days after notification of the contamination, diminution, or interruption of a water supply as a proximate result of the mine's operation.

3. NOTIFICATION OF IMPACT BY OPERATOR

AEC will notify the Division of all received water complaints and detailed responses to those complaints. In particular, dates and methods of repair and/or replacement will also be provided. If AEC plugs a well, it will send the Division a copy of the sealing report filed with ODNR – Division of Water. If AEC drills a well, it will submit a copy of the drilling report filed with ODNR – Division of Water to the Division, and a completed Hydrologic Analysis from a one-time sample, and address the monitoring of this well, if applicable.

4. TEMPORARY WATER SUPPLY

At its own expense AEC will install an alternate water supply system to be used until repair or replacement is completed or will reimburse the water user for the reasonable cost of obtaining a water supply from the date of any such contamination, diminution, or interruption until the supply is repaired or replaced. Work on installing a temporary alternate water supply will be complete within 48 hours after AEC learns of the contamination, diminution, or interruption to a legitimately-used water supply proximately caused by the mining operation. In cases where temporary water cannot be provided within 48 hours, AEC will immediately notify the Chief of the Division of Mineral Resources Management who will determine if the circumstances warrant an extension of the 48 hours.

5. DETERMINATION OF IMPACT

AEC will make a determination of liability no later than sixty (60) days after notification of the contamination, diminution, or interruption of a water supply as a proximate result of the mine's operation. As an option, AEC may defer to the Division to make such determination.

6. PERMANENT SUPPLY OPTIONS

AEC will provide the affected water user with no less of an available water supply than the water user had before mining, based on the pre-mining measurements and analyses. In some cases, AEC reaches pre-subsidence agreements with water users, who are normally represented by counsel and in all cases, have full opportunity to consult with counsel or anyone else of their choosing. These agreements, which are typically negotiated by AEC employees, normally cover all potential damage claims. In situations where such an agreement is reached, AEC intends to comply with the water replacement terms contained in the agreement. Such an agreement will satisfy, at a minimum, this permit and ORC 1513.162.

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In repairing or replacing a water user's ground or surface water supply system used for domestic use which is damaged as a proximate result of the mine's operation, AEC's first preference is to repair the affected supply system. If that is neither effective nor feasible, AEC's second preference is to replace the affected supply system with a like supply system.

As stated in the previously-referenced PHC narratives, the elevation of alternative water sources is unpredictable until the water system in the area again attains equilibrium after mining. Therefore, the alternative water supplies to be developed will be selected on a case-by-case, site-specific basis from among the options in the following list when the need arises:

1. Repair damaged cisterns after AEC has determined that subsidence is complete by grouting the cistern or by replacing it;
2. On a site-specific basis, re-drill existing wells, drill new wells, or connect the water user to public water supplies. Switzer Water Association has existing water lines on SR145 and Twp Roads 1011(Crum Rd) and 137 within the shadow area and is currently serving approximately 12 occupied structures therein. There are less than two occupied structures within the application area that are not on the system but could be connected to the existing public water system for interim or permanent water replacement. AEC and affiliated Ohio Valley Coal Company (OVCC) have drilled a number of successful replacement wells over the years for both domestic and agricultural replacements.
3. On a site specific basis, developed springs will be replaced by a farm pond built according to accepted engineering practices, drilling of a new well, development of another spring in close proximity to the original spring, if viable, or connect the water user to public water.
4. Repair damaged farm ponds so as to be comparable to their pre-mining conditions. This has been successfully accomplished on Warner Moore's property that had an abandoned gas well in the pond. When the mining went through, it drained the pond. OVCC put clay in the bottom of the pond and stopped the leak. There was a pond that was repaired in the 30 West panel that was also successfully repaired.
5. Install an interim water supply until affected water supplies are replaced. Interim supplies may include hauled water or a tap to public water. AEC will only install temporary, replacement water using a public water supply if it can be connected within 48 hours. AEC routinely uses a certified water hauler to haul county water for temporary replacement supplies. This practice is expected to continue. The local fire department can haul water within a matter of hours after receiving a

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request. Temporary tanks and water troughs for livestock are kept in stock to facilitate quick installations. AEC will pay for interim water bills.

6. Such other proven, cost effective, and reasonable techniques as AEC may now, or in the future, deem appropriate.

Permanent replacement, repair or the installation of a replacement water supply for an affected water supply shall be completed after it has been determined that the supply has been contaminated, diminished, or interrupted as a proximate result of the operator's mining operation.

Those supplies may include, but not be limited to, re-development of an existing well, spring, or pond, or replacement of the source with the County Water System. Other supplies include wells or springs. AEC has drilled wells and developed springs over longwall-mined areas successfully.

#### 7. PAYMENT

If contamination, diminution, or interruption of a legitimately-used ground or surface water supply occurs as a proximate result of the mine's operation, AEC will repair such water supply or install a replacement supply at its own expense. This pertains to both interim and permanent water supply replacement.

AEC, in the past, has always attempted to consult and negotiate with the affected water user concerning the selection of the type of water replacement system and its site. This is done at the request of water users who prefer this procedure to that of AEC making unilateral decisions about replacement supplies and sites.

#### 8. APPEALS

In any situation where AEC determines that the contamination, diminution, or interruption of a legitimate water supply was not proximately caused by the mining operation, based on evidence such as the proximity of the supply to the mining operation, site specific geologic and surface conditions, or climatological conditions, AEC will provide the water user and the Division of Mineral Resources Management with notice of its determination and the proof in support of that determination to allow the Division of Mineral Resources Management to issue a Chief's Order deciding the issue. This Chief's Order is then appealable in accordance with O.R.C. §1513.13. The water user's water supply system will continue in operation during the time AEC seeks review of this matter pursuant to O.R.C. §1513.13, unless the Reclamation Commission grants temporary relief. Furthermore, AEC will provide a temporary water supply pending an appeal filed by the complainant in response to a determination that mining did not cause the adverse impact to the water supply.

- (3) Identify the extent to which the proposed underground mining operations, including subsidence impacts, may proximately result in contamination, diminution or interruption of an underground or surface supply of water within the proposed shadow area and adjacent areas which is used for domestic, agricultural, industrial or other legitimate use. If contamination, diminution or interruption may result, provide a description of alternative sources of water which could be developed to replace existing sources including information on water availability and suitability of alternative water sources for existing pre-mining uses and approved post-mining land uses. Furthermore, address the protection of the rights of present users of surface and ground water.

**See Part 3 Item C (3) attached as an addendum to this Item as applied to the mining area at Beallsville.**

**There should not be any surface disturbance or subsidence impacts in the mining area in Belmont County since it is room and pillar for entries extension only. No contamination, diminution or interruption of water supplies is therefore anticipated as there are no known sources of used water supplies within its shadow area.**

- (4) Is the application within 1,000 feet of an Ohio Source Water Protection Area? Yes ☐ No ☒ If "yes," indicate the name of the protection area. Describe activities that are potentially harmful to public water supplies and address mitigation of, and alternatives, to such activities. Identify the protection area on the Hydrology Map.

**D. GROUND WATER AND SURFACE WATER MONITORING PLAN**

Based upon the probable hydrologic consequences determination and analysis of all baseline hydrologic, geologic and other information submitted in this application, describe the plan for collection, recording and reporting of all surface and ground water quality and quantity monitoring data, including data collected for the NPDES program.

**See Addendum to Part 3, D**

## GROUND AND SURFACE WATER MONITORING

### 1. Ground Water Monitoring Plan

All legitimately used ground water and surface water supplies have been identified in the Ground Water and Surface Water Inventories, respectively. These used supplies will be monitored quarterly for quality and monthly for quantity for at least one year prior to full recovery mining, and at least one year subsequent to mining contingent upon review by the Division of Mineral Resources Management, unless access is denied by the land owner. Quarterly Monitoring Reports and Daily precipitation data will be submitted to the appropriate District office no later than 14 days after the end of the quarter.

### 2. Surface Water Monitoring Plan

Stream stations upstream and downstream of the shadow area as depicted on the application/hydrology map will be sampled monthly for flow and quarterly for quality. The quality requirements of OAC 1501:13-4-13(E)(2) and the other QMR parameters as stated on the Underground Mining-Shadow Area-Water Monitoring Report (see attached addendum to this item) will apply to the surface water analysis. Each surface monitoring station will be monitored for at least one year prior to, and continuing for one year after underground mining.

There are a number of stream sampling stations within the hydrology review area that are or will be monitored under adjacent area permit D-0425-14 and D-0425-3. Stream sites that are currently being monitored under D-0425-14 are as follows: D-9D, D-9C, D-9B, U-9A, U-9, U-8D1, D-8A, U-7, D-8E, D-8D, and U-8E. These are indicated on the application/hydrology map with an inscribed hexagon symbol. No area of D-0425-3 shadow area overlapping the present application hydro boundary is within a subsidence zone of D-0425-3, therefore, no overlapping sites shown are required to be monitored as part of the D-0425-3 monitoring plan. However, some sites will be monitored due to falling within the 500' boundary of the proposed application. The site is U-11A.

The following stream stations will be added in the monitoring plan under this application: U-8B, U-8C, and U-8.

Any used ponds in the application area will be monitored in the manner as described for ground water supplies. The following ponds are currently being monitored under D-0425-14: P-29.03, P-34.01, P-34.03, P-34.05, P-34.07, and P-34.11 and are also indicated on the application/hydrology map with an inscribed hexagon symbol.

Ground and Surface water supplies and stream sampling stations located within 500 feet (measured horizontally) of the perimeter of the active longwall panel will be monitored as if they were located on the panel. Monitoring will be continued for at least one year subsequent to full recovery mining contingent upon review by the Division of

Mineral Resources Management. Daily precipitation data will be submitted quarterly to evaluate spring, stream, and pond flow.

If pre-mining condition is not restored naturally by the end of the five year monitoring period mitigation/remediation efforts will begin subsequent to the approval of an ARP submitted for this express purpose.

With each quarterly monitoring report of ground and surface water, a map depicting the progression of the longwall face will be attached to indicate the sampling points in the full recovery areas. Notes will be submitted indicating the position relative to the longwall face, with "-" indicating the station is in advance of the face and a "+" indicating a position behind the face. An attempt will be made to monitor and sample as outlined above; however, some sources may not be accessible. These locations, if encountered, will be documented in the quarterly reports. If a required monitoring site cannot be sampled and/or measured on the first attempt within the Quarter, a second attempt will be made. All samples will be taken as outlined to the extent that existing well construction allows. Any samples that are unobtainable will be documented as such in the quarterly report.

All developed supplies have been identified and have been indicated on the application/hydrology map and the Ground Water and Surface Water Inventories.



COMPANY  
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\*SWL FOR WELLS IS IN FT FROM SURFACE  
TO WATER.  
\*\*FLOW FOR SPRINGS IS IN GPM  
FLOW FOR STREAMS IS IN CFS

QUARTERLY MONITORING REPORT - MONITORING DATA  
QUARTER (YEAR)

SITE ID	SITE CODE	DATE	FLOW (GPM OR CFS)	SWL (FT)	COMMENT	ELEV. (FT - MSL)	DEPTH (FT)	BOTT ELEV (FT - MSL)	SWL ELEV (FT - MSL)	COAL ELEV.	DATE	LOCATION	STATE PLANE COORDS X Y
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COMPANY  
MINE  
PERMIT

QUARTERLY MONITORING REPORTS - (YEAR) - WATER ANALYSIS - \_\_\_\_\_ QUARTER

Site ID	SITE CODE	Date Sampled	Field pH	Lab pH	Tot. Acidity	Tot. Alk.	Tot. Iron	Tot. Mn	Tot. Sus Sol.	Hardnes	Tot. Sulfate	Spec. Cond.	Tot. Nitrates
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**E. COAL MINING NEAR UNDERGROUND MINES**

- (1) Will mining operations within this application area be conducted within five hundred feet of an active underground mine or known abandoned underground mine?  
Yes ☐ No ☒ If "yes", MSHA approval is required.
- (2) If "yes" to item E (1), will the mining operations result in improved resource recovery, abatement of water pollution or elimination of hazards to the health and safety of the public?  
Yes ☐ No ☐ If "yes," check appropriate blank.
- ☐ Resource recovery  
☐ Abatement of water pollution  
☐ Elimination of hazards
- (3) Provide documentation that the remaining barrier will be sufficient to prevent failure with respect to the level of flooding in the adjacent underground mine.

**Beallsville: Not Applicable as there is no inundated adjacent mine. Drainage from the operating adjacent mine is controlled via internal pumping.**

**Belmont Area: Per MSHA regulation 75.1701, a 200' barrier from adjacent underground areas is a safe distance. A 200' barrier exists between the proposed mining area and the D-0425-3 mine.**

## **PART 4: UNDERGROUND MINING PLAN**

### **A. SUBSIDENCE CONTROL SURVEY**

- (1) Is this a full coal recovery operation?
- Yes ☒ No ☐ If "yes," complete Pre-Subsidence Inventory and items A (2) and (3).
- (2) Does the shadow area contain any of the structures or facilities listed in 1501:13-12-03(J)(1-3)?
- Yes ☒ No ☐ If "yes," complete Subsidence Control - Protection of Specific Structures, and specifically identify the structures or facilities on the application map.
- (3) Are any aquifers or bodies of water that serve as a significant water source for any public water supply system present in the shadow area?
- Yes ☐ No ☒ If "yes," complete Subsidence Control - Protection of Specific Structures, and specifically identify the areas on the application map.

### **B. SUBSIDENCE CONTROL PLAN**

- (1) Describe the method of coal removal, and indicates the size, sequence, and timing of the development of the underground workings.
- See Addendum to Part 4, B(1) Structure Contour, Timing, Coal Parcel Map**
- (2) Utilizing the application map, specifically indicate areas where planned subsidence mining methods (i.e. longwall or pillar extraction) will be used.
- (3) Utilizing the application map, specifically indicate room-and-pillar mining areas where subsidence will be prevented or minimized.
- (4) For those areas mapped as room-and-pillar mining, provide the following information:

- (a) The maximum and average overburden thickness.

**Maximum = 580 feet; Average = 510 feet (Beallsville)**  
**Maximum = 610 feet; Average = 580 feet (Belmont Co.)**

- (b) The projected maximum extraction ratios for mains, submains, and butt sections, as well as the existing ranges of values for the same areas.

**(Beallsville) the extraction ratios will range from 42.6 to 43.3% for gate entries developed on 75 foot centers, with 18 foot wide entries and a headgate entry width of 20 feet (figures 1 and 2).**  
**(Belmont Co) the maximum extraction ratio is 49.9% for the minimum pillar dimension of 40' x 47' in submain development (figure 3). See**

## OHIO DEPARTMENT OF NATURAL RESOURCES

## DIVISION OF RECLAMATION

## PRE-SUBSIDENCE INVENTORY

Applicant's Name: CENTURY MINE D-0425-15

SURFACE OWNER	COUNTY	TOWNSHIP / SECTION	RENEWABLE RESOURCE	STRUCTURES - USE	MAP LOC. KEY
Donald & Ruth Headley	Monroe	Sunsbury / 12	Woodland		24
"	"	"	Stream		U-8B
Ida Campbell	Monroe	Sunsbury/ 12		T.R. 1011	29
"	"	"	Streams(2)	House	D-8A, U-8B
"	"	"	Woodland	2 - Barns	
"	"	"	Cropland	Silo	
"	"	"	Residential	12" Culvert(2)	
"	"	"		Corn Crib	
Monroe County Park	Monroe	Sunsbury/ 12	Woodland		33
"	"	"	Stream		U-8
W. & B. Reed	Monroe	Sunsbury /6 & 12		S. R. 145	34
"	"	"	Dev. Springs	T.R. 1011	DS--34.00, DS-34.02
"	"	"	"	2 - House(HT,Cabin)	DS-34.16, DS-34.17
"	"	"	"	2 Garages	DS-34.18, DS-34.19
"	"	"	Ponds	3- Sheds	P-34.01, P-34.07
"	"	"	Pasture	3-Barns	
"	"	"	Woodland	Silo	
"	"	"	Cropland	12" Culvert(3)	
"	"	"	Residential		

## OHIO DEPARTMENT OF NATURAL RESOURCES

## DIVISION OF RECLAMATION

## PRE-SUBSIDENCE INVENTORY

Applicant's Name: CENTURY MINE D-0425-15

SURFACE OWNER	COUNTY	TOWNSHIP / SECTION	RENEWABLE RESOURCE	STRUCTURES - USE	MAP LOC. KEY
Samuel & Hazel Post	Monroe	Sunsbury / 12		T.R. 1011	36
"	"	"	Residential	House	Public Water
"	"	"		Garage	
"	"	"		3-Sheds	
Ben Mellott	Monroe	Sunsbury / 6		T.R. 137	69
"	"	"	Residential	House	Public Water
"	"	"		Pool	
Johnson Construction Co.	Monroe	Sunsbury / 6		T.R. 1101	70
"	"	"	Commercial	Commercial Bldg.	Public Water
"	"	"		12" Culvert	
Joyce Ogilbee	Monroe	Sunsbury / 6		T.R. 1011	71
"	"	"	Residential	House	Public Water (not used)
"	"	"	Wells	Garage	W-71.00, W-71.01
David & Rhonda Boughner	Monroe	Sunsbury / 6		S.R. 145	72
"	"	"	Residential	House	Public Water
"	"	"	Well	Shed	W-72.00
				Above ground pool	

## OHIO DEPARTMENT OF NATURAL RESOURCES

## DIVISION OF RECLAMATION

## PRE-SUBSIDENCE INVENTORY

Applicant's Name: CENTURY MINE D-0425-15

SURFACE OWNER	COUNTY	TOWNSHIP / SECTION	RENEWABLE RESOURCE	STRUCTURES - USE	MAP LOC. KEY
Stan Burdett	Monroe	Sunsbury / 6		S. R. 145	73
"	"	"	Residential	T.R. 137	Public Water
"	"	"		House	
"	"	"		Shed	
Joan Cramer & R Shriver	Monroe	Sunsbury / 6		T.R. 137	74
"	"	"	Residential	Shed	Public Water
George Hoover Jr.	Monroe	Sunsbury / 6		T.R. 137	79
"	"	"	Residential	House	Public Water
"	"	"	Well	Garage	WL-79.00
"	"	"		Above ground pool	
George Hoover Sr. & Pamela	Monroe	Sunsbury / 6		T.R. 137	80
"	"	"	Stream (2)	Shed	U-9, U-9A
"	"	"	Pond		P-80.08
"	"	"	Crop		
"	"	"	Woodland		
Shirley Smith	Monroe	Sunsbury / 6		T.R. 137	81
"	"	"	Residential	House	Public Water

## OHIO DEPARTMENT OF NATURAL RESOURCES

## DIVISION OF RECLAMATION

## PRE-SUBSIDENCE INVENTORY

Applicant's Name: CENTURY MINE D-0425-15

SURFACE OWNER	COUNTY	TOWNSHIP / SECTION	RENEWABLE RESOURCE	STRUCTURES - USE	MAP LOC. KEY
"	"	"		15" Culvert	
Village of Beallsville	Monroe	Sunsbury / 6		T.R. 1011	86
"	"	"	Recreational	12" Culvert	Public Water
Matt & Joy Dillon	Monroe	Sunsbury / 6		T.R. 1011	87
"	"	"	Residential	House	
"	"	"	Well	Garage	W-87.00
"	"	"		Shed	
G Neil Hamilton	Monroe	Sunsbury / 6		T R 1011	88
"	"	"	Well	House	W-88.00
"	"	"	Residential		
Peggy & Ronal Lucas	Monroe	Sunsbury / 6		S.R. 145	91
"	"	"	Residential	House	Public Water
"	"	"	Well	Shed	WL-91.00
"	"	"	Stream		U8-E
Steve Susac	Monroe	Sunsbury / 6		S.R. 145	95
"	"	"	Woodland		

## OHIO DEPARTMENT OF NATURAL RESOURCES

## DIVISION OF RECLAMATION

## PRE-SUBSIDENCE INVENTORY

Applicant's Name: CENTURY MINE D-0425-15

SURFACE OWNER	COUNTY	TOWNSHIP / SECTION	RENEWABLE RESOURCE	STRUCTURES - USE	MAP LOC. KEY
Dale Caldwell	Monroe	Sunsbury / 12		T.R. 1011	118
"	"	"	Residential	House (2)	Public Water
"	"	"	Well	Barn	DW-118.00
"	"	"		Shed	
Andrea Coss	Monroe	Sunsbury / 12		T.R. 137	124
"	"	"	Residential	18" Culvert	Public Water
Andrea Coss	Monroe	Sunsbury / 12		T.R. 137	76
"	"	"	Cropland		Public Water



**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**SUBSIDENCE CONTROL – PROTECTION OF SPECIFIC STRUCTURES**

Applicant's Name: **American Energy Corp.**    **D-0425-15**

1. List the specific structures, facilities or features to be protected and the corresponding map location key.

**Public baseball field (on south side of Crum Rd.) SEE ADDENDUM TO PART 4, B(5)(d) "Anticipated Effects - Surface Structures: Public Baseball Field"**

2. Is a subsidence control plan being submitted, and does the plan demonstrate that subsidence will not cause material damage or reduce the reasonable foreseeable use of such structures, facilities or features? ☒ Yes, ☐ No

If "yes," submit the proposed subsidence control plan.

If "no," answer questions 3 – 7 below.

Submit documentation the proposed subsidence control plan, or the documentation required by answering questions 3-7 below, has been provided to the public authority responsible for the protected structures, facilities or features. Submit copies of all comments received from the public authority on the required submittal or responses.

3. What is the dimension of the safety zone on the surface that extends beyond the structure to be protected?        feet
4. Is the ground surface slope within the protected area greater than 14% or 8 degrees in any direction? ☐ Yes, ☐ No

If "yes," describe the increased size of the protected area on the downslope side necessary to compensate for this slope.

5. Describe the method for determining the size of the pillar support area at mine level.
6. Indicate the maximum extraction ratio and the minimum safety factor of the coal pillars within the proposed pillar support area.
7. Indicate the long-term strength of the mine roof and the mine floor relative to the strength of the coal seam.

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**SUBSIDENCE CONTROL – PROTECTION OF SPECIFIC STRUCTURES**

Applicant's Name: **American Energy Corp.**    **D-0425-15**

1. List the specific structures, facilities or features to be protected and the corresponding map location key.

**Public Roads (SR 145, Twp Rd 137 & 1011) and associated culverts within Right-of-Way SEE ADDENDUM TO PART 4, B(5)(d) "Anticipated Effects - Surface Structures: Roads"**

2. Is a subsidence control plan being submitted, and does the plan demonstrate that subsidence will not cause material damage or reduce the reasonable foreseeable use of such structures, facilities or features? ☒ Yes, ☐ No

If "yes," submit the proposed subsidence control plan.

If "no," answer questions 3 – 7 below.

Submit documentation the proposed subsidence control plan, or the documentation required by answering questions 3-7 below, has been provided to the public authority responsible for the protected structures, facilities or features. Submit copies of all comments received from the public authority on the required submittal or responses.

3. What is the dimension of the safety zone on the surface that extends beyond the structure to be protected?                      feet
4. Is the ground surface slope within the protected area greater than 14% or 8 degrees in any direction? ☐ Yes, ☐ No

If "yes," describe the increased size of the protected area on the downslope side necessary to compensate for this slope.

5. Describe the method for determining the size of the pillar support area at mine level.
6. Indicate the maximum extraction ratio and the minimum safety factor of the coal pillars within the proposed pillar support area.
7. Indicate the long-term strength of the mine roof and the mine floor relative to the strength of the coal seam.

# American Energy Corporation

43521 Mayhugh Hill Road  
Twp. Hwy. 88  
Beallsville, OH 43716  
740-926-9152  
740-926-9138

December 6, 2010

Mayor John Gramlich  
Village of Beallsville  
52729 Washington St.  
Beallsville, OH 43716

RE: D-0425-15 Proposed Adjacent Permit Area – Subsidence Control Plan

Sir:

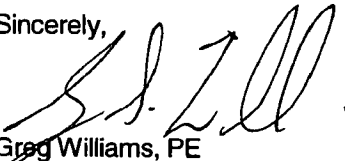
Please find enclosed a copy of the proposed permit application map. This shows the extents of proposed underground mining activity. This is to notify you that your agency has jurisdictional public facilities, that is the public ball fields on Crum Road, within the proposed area and are shown on the map.

As you may know from experience, longwall mining can cause subsidence of the ground surface. American Energy Corp. (AEC) anticipates little to no impact on the public ball fields over the proposed application area. A small portion of the field facility lies within the subsidence zone.

AEC will notify The Village of Beallsville at least six months prior to undermining the ball field. In the event that the field, dugout or concession stand are damaged by subsidence, AEC, at the request of The Village of Beallsville, will pay to repair the damages to its pre-mining conditions.

If your agency has any comments or concerns in this regard, please forward them to my attention at your earliest convenience. If you have any questions or require additional information, please do not hesitate to contact me at 740/926-1351x396 or 740/310-2989.

Sincerely,



Greg Williams, PE  
Permitting Engineer

Enclosures

CC: file

AEC 09764

# American Energy Corporation

43521 Mayhugh Hill Road  
Twp. Hwy. 88  
Beallsville, OH 43716  
740-926-9152  
740-926-9138

July 2, 2010

ODOT – Highway Management  
District Eleven  
2201 Reiser Ave., SE  
New Philadelphia, OH 44663  
Attn: James R. Graham, PE

RE: D-0425-15 Proposed Adjacent Permit Area – Subsidence Control Plan

Sir:

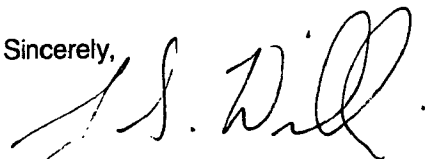
Please find enclosed a copy of the proposed permit application map. This shows the extents of proposed underground mining activity. This is to notify you that your agency has jurisdictional public facilities, SR145, within the proposed area and are shown on the map.

As you may know from experience, longwall mining can cause subsidence of the ground surface. American Energy Corp. (AEC) anticipates little to no impact on these roads. AEC posts bonds for all roads to be undermined. The effect of mining on public roads is typically limited to minor cracking of the pavement or road surface from tension and in a few instances, humping of the surface due to compression. In all instances, the roads have never been closed and repairs have been made by the governing authority and reimbursed by AEC. Roads are inspected frequently during subsidence, and AEC works closely with the governing authority throughout the mining and subsidence.

AEC will notify the appropriate ODOT Dept. at least six months prior to undermining its roads. AEC will inspect the areas around roads located on steep areas that could be subject to slippage and will repair surface cracks in these areas immediately if necessary to keep water from causing the soil to slip. In the event that roadways are permanently damaged by subsidence, AEC, at the request of the road authority, will pay to repair the road surface to its pre-mining condition.

If your agency has any immediate comments or concerns in this regard, please forward them to my attention at your earliest convenience. If you have any questions or require additional information, please do not hesitate to contact me at 740/926-1351x396 or 740/310-2989.

Sincerely,



Greg Williams, PE  
Permitting Engineer

Enclosures

CC: file

AEC 09765

**American Energy  
Corporation**

43521 Mayhugh Hill Road  
Twp. Hwy. 88  
Beallsville, OH 43716  
740-926-9152  
740-926-9138

July 2, 2010

Clerk, Sunsbury Township  
PO Box 147  
48207 Railroad Ave.  
Beallsville, OH 43716

RE: D-0425-15 Proposed Adjacent Permit Area – Subsidence Control Plan

Sir:

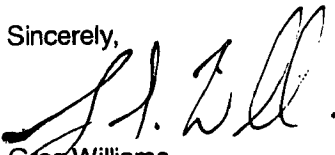
Please find enclosed a copy of the proposed permit application map. This shows the extents of proposed underground mining activity. This is to notify you that your agency has jurisdictional public facilities, Twp Roads 137 and 1011, within the proposed area and are shown on the map.

As you may know from experience, longwall mining can cause subsidence of the ground surface. American Energy Corp. (AEC) anticipates little to no impact on these roads. AEC posts bonds for all roads to be undermined. The effect of mining on public roads is typically limited to minor cracking of the pavement or road surface from tension and in a few instances, humping of the surface due to compression. In all instances, the roads have never been closed and repairs have been made by the governing authority and reimbursed by AEC. Roads are inspected frequently during subsidence, and AEC works closely with the governing authority throughout the mining and subsidence.

AEC will notify the Township at least six months prior to undermining its roads. AEC will inspect the areas around roads located on steep areas that could be subject to slippage and will repair surface cracks in these areas immediately if necessary to keep water from causing the soil to slip. In the event that roadways are permanently damaged by subsidence, AEC, at the request of the road authority, will pay to repair the road surface to its pre-mining condition.

If your agency has any comments or concerns, please forward them to my attention at your earliest convenience. If you have any questions or require additional information, please do not hesitate to contact me at 740/310-2989.

Sincerely,



Greg Williams  
Permitting Engineer

Enclosures

CC: file

AEC 09766

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

SUBSIDENCE CONTROL – PROTECTION OF SPECIFIC STRUCTURES

Applicant's Name: **American Energy Corp.** **D-0425-15**

1. List the specific structures, facilities or features to be protected and the corresponding map location key.

**Public Water Lines (within SR 145, Twp Rd 137 & 1011 Right-of-Way) SEE ADDENDUM TO PART 4, B(5)(d) "Anticipated Effects - Surface Structures: Utility Installations"**

2. Is a subsidence control plan being submitted, and does the plan demonstrate that subsidence will not cause material damage or reduce the reasonable foreseeable use of such structures, facilities or features? ☒ Yes, ☐ No

If "yes," submit the proposed subsidence control plan.

If "no," answer questions 3 – 7 below.

Submit documentation the proposed subsidence control plan, or the documentation required by answering questions 3-7 below, has been provided to the public authority responsible for the protected structures, facilities or features. Submit copies of all comments received from the public authority on the required submittal or responses.

3. What is the dimension of the safety zone on the surface that extends beyond the structure to be protected?  feet
4. Is the ground surface slope within the protected area greater than 14% or 8 degrees in any direction? ☐ Yes, ☐ No

If "yes," describe the increased size of the protected area on the downslope side necessary to compensate for this slope.

5. Describe the method for determining the size of the pillar support area at mine level.

6. Indicate the maximum extraction ratio and the minimum safety factor of the coal pillars within the proposed pillar support area.

7. Indicate the long-term strength of the mine roof and the mine floor relative to the strength of the coal seam.

**American Energy  
Corporation**

43521 Mayhugh Hill Road  
Twp. Hwy. 88  
Beallsville, OH 43716  
740-926-9152  
740-926-9138

June 29, 2010

Switzer Water Association  
50190 Gibbs Rd,  
Clarington, OH 43915  
Attn: Starling Zink

RE: D-0425-15 Proposed Adjacent Permit Area – Subsidence Control Plan

Sir:

Please find enclosed a copy of the proposed permit application map. This shows the extents of proposed underground mining activity. This is to notify you that your agency has jurisdictional public facilities within the proposed area and are shown on the map.

As you may know from experience, longwall mining can cause subsidence of the ground surface. American Energy Corp. (AEC) anticipates little to no impact on the utility installations over the proposed application area. Utility lines (water, electric, etc.), typically undergo little or no damage due to subsidence over the underground mining area. The utility lines that are typically damaged are public water lines made of asbestos concrete. Other construction materials typically withstand subsidence well.

AEC will notify Switzer Water Association at least six months prior to undermining the lines. In the event that the pipelines are damaged by subsidence, AEC, at the request of the public water line authority, will pay to repair the pipeline to its pre-mining conditions. Over the years, AEC and its sister mine, Ohio Valley Coal Company's Powhatan No. 6, have mined under more than 30 miles of public water lines by longwall mining since January 1990. During that time, many types of water lines have been undermined, including asbestos-concrete lines, HDPE lines, and PVC lines. During this time period, only one (1) break occurred, and it was located at the start of a longwall panel. This pipe was an asbestos-concrete line, and the construction was such that the end of the pipe broke off when subjected to subsidence forces. To our knowledge, there are no asbestos-concrete pipes located within this application area. Should damage occur, however unlikely, Switzer Water Association will repairs its own lines and AEC shall reimburses them.

If your agency has any comments or concerns in this regard, please forward them to my attention at your earliest convenience. If you have any questions or require additional information, please do not hesitate to contact me at 740/926-1351x396 or 740/310-2989.

Sincerely,



Greg Williams, PE  
Permitting Engineer

Enclosures

CC: file


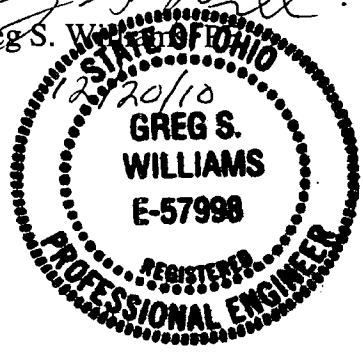
AEC 09768

The Impoundment on the Reed property, P-34.01, is presently more than 20 acre-feet in volume. However, the form for Subsidence Control – Protection of Specific Structures is not needed as there is a plan to modify the impoundments to a volume of less than 20 acre-feet to remove them as qualifying structures.

Reed has agreed to modify the impoundment to a volume of less than 20 acre-feet by lowering the principal spillway to an elevation that will impound a volume of less than 20 acre-feet. This construction modification will be performed by Reed's own construction company and will occur within the next six months before mining activities occur in the immediate area. No longwall mining will occur within 250' of this impoundment footprint until the modification work is done. This does not exclude conventional mining with room and pillar taking place for gate entry development.

The Construction Modification Plan is based on surveys of the pre-construction and post construction topography of the pond and embankment. Stage Storage calculations have been made to determine current volume as well as the final elevation necessary to impound less than 20 acre-feet. The elevation of the pond principal spillway is known.

The Applicant is requesting a conditional issuance of the permit contingent upon the completion of this work to the satisfaction of the Division. Upon completion, a certified engineer's statement will be provided to the Division certifying that the impoundment is less than 20 acre-feet in volume including a plan survey exhibit and stage storage calculations. This impoundment straddles both D-0425-14 and the proposed application. This condition is already approved under D-0425-14.

  
Greg S. Williams  




**Addendum to Part 4, Item B(4)(b-h)**

**Butt sections are not projected in either mining area.**

- (c) Projected maximum width of entries and cross cuts throughout the mine, as well as the existing ranges of values for the same areas.

**Maximum width of entries and crosscuts = 18 ft, and range typically from 16 to 18 ft.; headgate belt entry maximum 20 ft. wide, a. Figure 1 contains the analysis for using a 20' wide headgate entry.**

**The Beallsville Mining Area analysis is shown on Figures 1 and 2. See Addendum to Part 4, Item B(4)(b-h)**

- (d) The center spacing for entries and cross cuts.

**(Beallsville-Figures 1 and 2) All entries will be driven on 75 foot centers; cross cuts will be driven on 75 foot centers @ 90 degrees.**

**(Belmont Co. Figures 3) Minimum Gate Entry = 65 ft. O.C.; Min. Crosscut = 58 ft. O.C. @ 90 degrees typical unless 60 or 45 degrees is needed to accommodate haulage;**

**Spacings are provided on Addendum to Part 4, B(4)(b-h) Engineering Properties for Development Entries.**

- (e) Minimum pillar dimensions for mains, submains, and butt sections, as well as the existing ranges of values for these areas.

**Minimum for 3 gate entry is 47.0 feet @ 60 and 90 degree crosscuts; Minimum for 3 gate entry is 42.1 feet @ 45 degree crosscut. (Beallsville) Minimum main entry and gate neck pillars = 47 ft x 40 ft;**

**See Addendum to Part 4, Item B(4)(b-h) (Belmont Co)**

**See attached Figures 1, 2 and 3 and Belmont County Mining Area Addendum, Engineering Properties for Development Entries.**

- (f) The barrier pillar width between butt sections, as well as the existing ranges of values for the same areas.

**Barrier pillars are always projected between longwall panels and submains. This applies to the Beallsville Mining Area. The Belmont Mining Area is a 2.5 acre submain projection. Barrier pillars flank both sides of this projection, as they do with all submain projections. Butt sections have no application with either mining area.**

- (g) The engineering properties of the clay/shale, or other soft rock material in the roof and floor of the mine under both saturated and natural moisture conditions.

**The Century Mine is a dry mine, with nearly all of the water that is found underground resulting from the mining process. There is no water pumped outside from the active mining areas of the mine, although**

WILLIAM J. SIPLIVY, P.E., C.P.G.

NAME Belmont County

NUMBER Application D-0425-15

Geotechnical Engineer

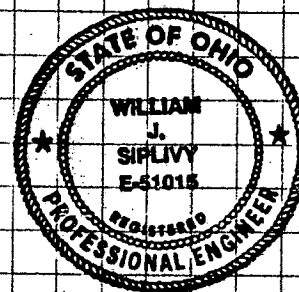
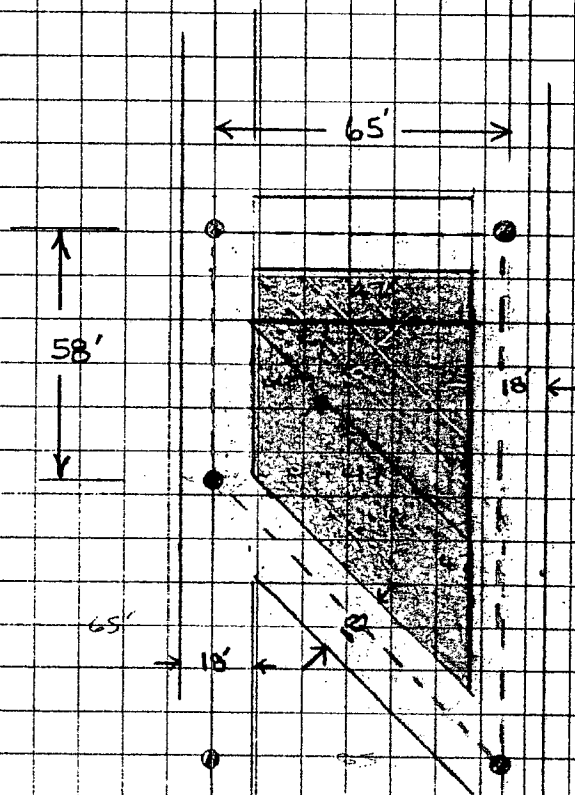
SHEET NO. 1 OF 1

4667 Turnberry Trail  
Stow, OH 44224

Addendum to Pt. 4, B(4)(e)

BY WJS DATE 21 Dec 2010

FIGURE 4. Pillar w/ 45° caps-cut  
& 18' wide entries



William J. Siplivy

$$\text{EXTRACTION RATIO} = 1 - \frac{[40 \times 70] + 47^2}{[65 \times 58] + 65^2} = 0.4926$$

$$\text{Percent Coal Unmined} = 100 - 49.26 = 50.73\%$$

$$\text{MAX OVERBURDEN THICKNESS} = 610 \text{ FT.}$$

$$\text{AVE. WT. ROCK DENSITY} = 0.0707 \text{ Tons/ft}^3$$

$$\text{AVE. LOAD ON PILLAR} = (610 \times 0.0707) \div 0.5073 = 85.01 \text{ Tons/ft}^2$$

$$\text{Pillar Strength} = 7500 (480'')^{3/2} / 78'' = 216,62 \text{ PSI} \approx 151.68 \text{ Tons/ft}^2$$

$$\text{Factor of Safety} = 151.68 \div 85.01 = 1.784$$

USE Holland Formula See Figures 1, 2, 3

some water is pumped from the bottom of airshafts. This water is essentially ground water collected behind the lining of the shaft. Therefore, water is not expected to impact the roof, floor, or coal strata. This condition is expected to continue indefinitely. If water does inundate the mine at some time in the future, it is not expected to cause ground control problems due to the large size of the pillars that will remain. Past problems with unplanned subsidence resulted from small pillar size and large quantities of water around very soft bottom rock. If the mine becomes flooded and inundates the roof rock, the immediate roof members will swell and collapse into the mine void. However, the falls of immediate roof does not adversely affect the surface. Above the immediate roof is the Redstone Limestone averaging 15 ft. thickness. This member consists of multiple beds of limestone separated by shale and claystone partings. The limestone beds are hard, fairly massive in texture (without stratafaciation) ranging in thickness from 2 to 11 ft. each. The partings are commonly 3 to 13 inches thick, with some reaching 24 inches. The partings occur randomly throughout the application area. This member will provide long term support if the immediate roof should collapse into the mine void. The coal is not affected by the presence of water.

a. In the Beallsville Mining Area the mine roof stratigraphy ranges from the typical claystone/limestone association to the shale/sandstone association, from east to west. This is shown on Geologic Cross-section A-A'. In the claystone/limestone roof zone, the intermediate roof is the Redstone limestone, which as a unit averages about 15 feet in thickness. This member consists of multiple beds of limestone separated by shale and/or claystone. The limestone beds are hard, fairly massive in texture and range from 2 to 11 feet in thickness. The partings are random, ranging from 3 to 24 inches.

b. Sufficiently large pillars will be in place in the unplanned subsidence areas. The extraction ratio here will be 0.50 or less. This should protect the surface from the impacts of eventual inundation when the mine closes.

c. The unconfined compressive strength of roof and bottom rock in the Beallsville Mining Area is expected to be comparable to that found in the Belmont County Mining area, as described in Engineering Properties for Development Entries.

d. Floor heaving may occur in the gate entries where the longwall panel has been mined. Floor heaving is not expected in the main or submain entries due to the low mining extraction ratio. The roof is supported by roof bolts (primary method) and timbers, cribs and planks, as needed for secondary support, as required in the U.S. MSHA Roof Control Plan.

e. The average pillar load is calculated in Figure 3. This document has been signed, sealed and dated by a professional engineer.

**Pillar Load = (Overburden thickness x Average rock density) / Ratio of unmined coal.**

- (h) Measures to be taken on the surface to prevent damage or lessening of the value or reasonably foreseeable use of the surface, if any.

**In order to prevent damage to the surface, pillars with safety factors greater than 2.0 will be utilized, and no pillar extraction will take place. (Beallsville)**

- (i) The minimum pillar safety factor, for protected structures, based upon coal strength and load.

**2.24 (Beallsville)**

**Not applicable for this application as there are no protected structures (Belmont Co)**

- (j) Methods and calculations used to determine the long-term safety factor.

**The Analysis of Retreat Mine Pillar Stability (ARMPS) program, developed by the National Institute for Occupational Safety and Health (NIOSH), was used to determine pillar safety factors. (Beallsville)  
A modified Holland Formula; See Addendum to Part 4, Item B(4)(b-h) (Belmont Co)**

- (k) Provide the minimum long-term subsidence control safety factor recommended by the method's author or the literature supporting this method.

**ARMPS room and pillar entry gates = 2.24 (Beallsville)**

- (l) Indicate how coal strength was determined if the assumed coal compressive strength exceeds 900 psi.

**A compressive strength of 900 psi was used for the Pittsburgh No. 8 coalbed, per the recommendation of MSHA, District 3, Morgantown, West Virginia. (Beallsville)**

- (m) Describe any prior unplanned subsidence events, pillar or floor failure experienced by the applicant. Indicate the seam mined and relevant facts.

**None of the events described above have occurred at Century Mine.**

- (5) For those areas mapped as full coal recovery mining, provide the following information:

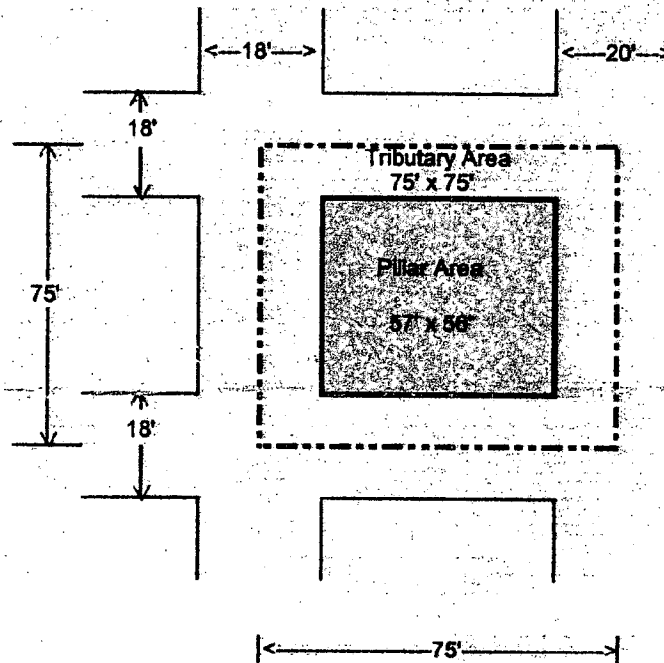
- (a) For each method to be employed (i.e. longwall or pillar extraction), provide the following:

- i) Rate and direction of dip for the coal seam.

**0.5%, South 56 degrees East**

American Energy Corporation  
Application D-0425-15  
Beallsville Mining Area  
Addendum to Part 4, B(4)(b-h)  
4 December 2010

Figure 1. Headgate Pillar, 75' o.c. with 20' Headgate Entry



*William J. Siplivy*  
4 Dec 2010

Extraction ratio =  $1 - [(57 \times 58) / (75 \times 75)] = 0.4325$   
Percent coal unmined =  $100 - 43.25 = 56.75\%$   
Maximum overburden thickness = 580 feet  
Average weight density of rock = 0.0707 tons/ft<sup>3</sup>  
Average load on pillar =  $(580 \text{ ft} \times 0.0707 \text{ tons/ft}^3) / 0.5675 = 72.26 \text{ tons/ft}^2$   
Pillar strength<sup>(1)</sup> =  $7500 (672'')^{1/2} / 78'' = 2492.59 \text{ psi} = 179.47 \text{ tons/ft}^2$   
Factor of Safety =  $179.47 / 72.26 = 2.48$

(1) Holland-Gaddy Coal Pillar Strength Formula, where:

Strength of Pillar =  $K (L)^{1/2} / T$

K = Material coefficient =  $Sp (D)^{1/2} = 4330(3)^{1/2} = 7500$

L = Least lateral pillar dimension, in inches (use 672").

T = Pillar thickness, in inches (use 78").

Sp = Test s Test strength, psi in unconfined compression.

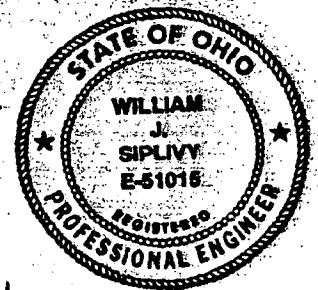
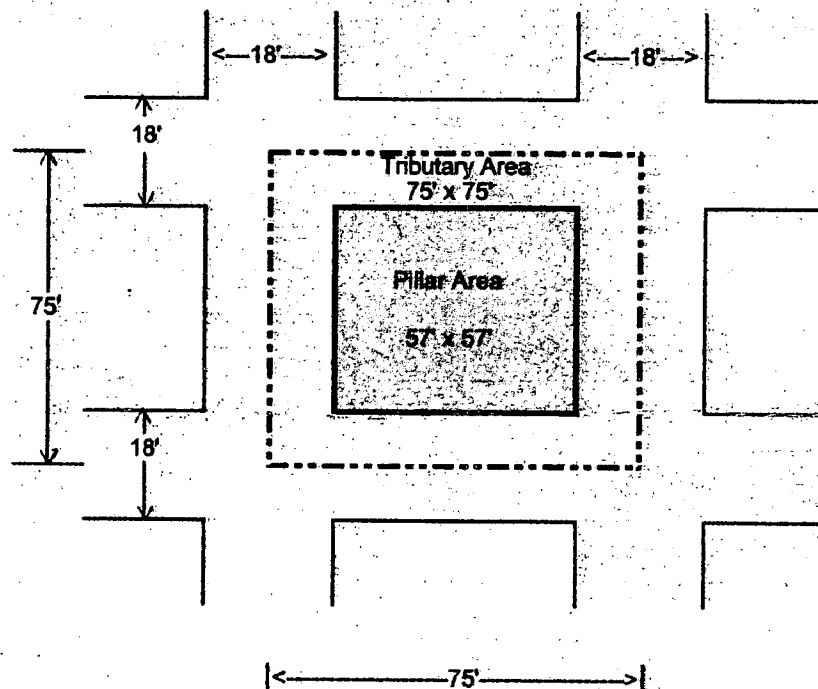
(Use 4330 psi, determined by Holland for the Pittsburgh coalbed).

D = Edge dimension of tested specimen, in inches (use 3").

Falls Towne Centre, Suite 104-2 • 2020 Front Street • Cuyahoga Falls, Ohio 44221  
330-928-3267 • [siplivy@sbcglobal.net](mailto:siplivy@sbcglobal.net)

American Energy Corporation  
Application D-0425-15  
Beallsville Mining Area  
Addendum to Part 4, B(4)(b-h)  
4 December 2010

Figure 2: Tailgate Pillar, 75' o.c. with 18' Entrties



*William J. Siplivy*  
4 Dec 2010

Extraction ratio =  $1 - [(57 \times 57) / (75 \times 75)] = 0.4225$   
Percent coal unmined =  $100 - 42.25 = 57.76\%$   
Maximum overburden thickness = 580 feet  
Average weight density of rock = 0.0707 tons/ft<sup>3</sup>  
Average load on pillar =  $(580 \text{ ft} \times 0.0707 \text{ tons/ft}^3) / 0.5776 = 70.99 \text{ tons/ft}^2$   
Pillar strength<sup>(1)</sup> =  $7500 (684'')^{1/2} / 78'' = 2514.74 \text{ psi} = 181.08 \text{ tons/ft}^2$   
Factor of Safety =  $181.08 / 70.99 = 2.55$

(1) Holland-Gaddy Coal Pillar Strength Formula, where:

$$\text{Strength of Pillar} = K (L)^{1/2} / T$$

$$K = \text{Material coefficient} = Sp (D)^{1/2} = 4330(3)^{1/2} = 7500.$$

L = Least lateral pillar dimension, in inches (use 684 in.).

T = Pillar thickness, in inches (use 78").

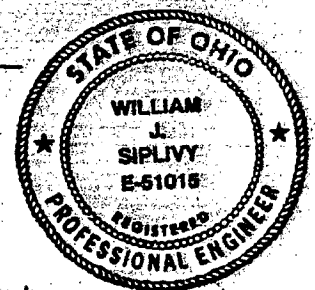
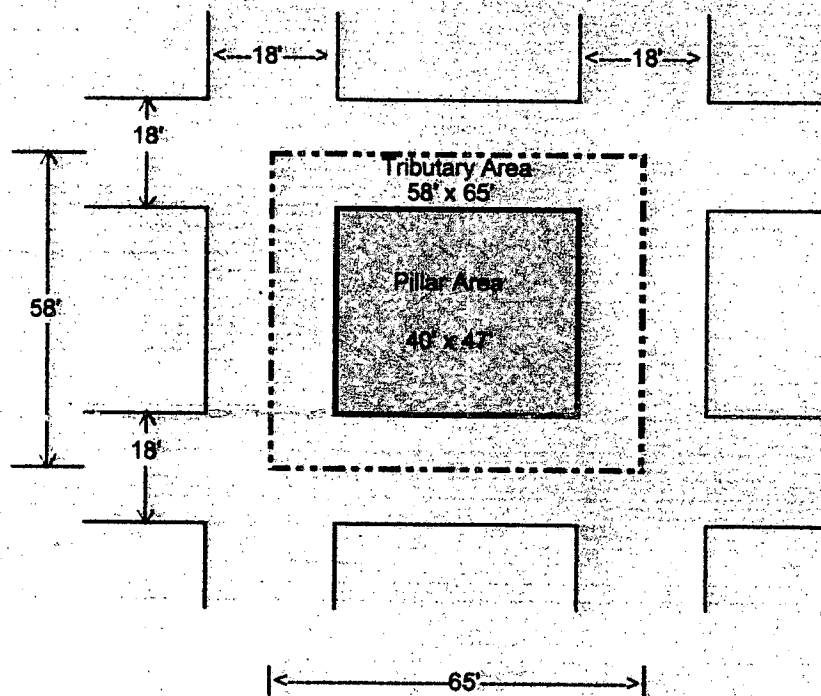
Sp = Test strength, psi in unconfined compression.

(Use 4330 psi, determined by Holland for the Pittsburgh coalbed).

D = Edge dimension of tested specimen, in inches (use 3").

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Figure 3. Minimum Pillar Dimension with 18' Entries



*William J. Siplivy*  
4 Dec 2010

Extraction ratio =  $1 - [(40 \times 47) / (58 \times 65)] = 0.4987$   
Percent coal unmined =  $100 - 49.87 = 50.01\%$   
Maximum overburden thickness = 610 feet  
Average weight density of rock = 0.0707 tons/ft<sup>3</sup>  
Average load on pillar =  $(610 \text{ ft.} \times 0.0707 \text{ tons/ft}^3) / 0.5013 = 86.03 \text{ tons/ft}^2$   
Pillar strength<sup>(1)</sup> =  $7500 (480'')^{1/2} / 78'' = 2106.62 \text{ psi} = 151.68 \text{ tons/ft}^2$   
Factor of Safety =  $151.68 / 86.03 = 1.76$

(1) Holland-Gaddy Coal Pillar Strength Formula, where:

$$\text{Strength of Pillar} = K (L)^{1/2} / T$$

K = Material coefficient =  $Sp (D)^{1/2} = 4330(3)^{1/2} = 7500$ .

L = Least lateral pillar dimension, in inches (use 480 in.).

T = Pillar thickness, in inches (use 78").

Sp = Test strength, psi in unconfined compression.

(Use 4330 psi, determined by Holland for the Pittsburgh coalbed).

D = Edge dimension of tested specimen, in inches (use 3").

- ii) Dimensions of panels or butt sections.

**1,150' x 11,590'**

- iii) Thickness of coal to be extracted (mining height).

**Approximately 5 feet for the longwall mining and up to 6.5 feet for the room and pillar development entries.**

- iv) Maximum angle of draw.

**24 degrees**

- v) Maximum anticipated subsidence.

**51.5%**

- vi) Width of barrier pillars or chain pillars between sections or panels.

**Pillars are projected for the Century mine based on prudent mining engineering practice and are sized according to their intended use. Pillars designed for the mine comply with the Roof Control Plan approved by the U.S. Mining Safety and Health Administration (MSHA).**

**Barrier pillars are always projected between longwall panels and submains. The barrier pillar between the Longwall panel and the main entries will be 430' in the Beallsville Mining Area. Chain pillars in the gate entries will be 57' X 57'.**

**The Belmont Mining Area is a 2.5 acre submain projection. Barrier pillars ultimately flank both sides of this projection, as they do with all submain projections and will be discussed in the future permit application that will flank the entries. Butt sections have no application with either mining area.**

- vii) The maximum extraction ratio within a pillaring section.

**(Belmont Co.) Max extraction is 49%, See Addendum to Part 4, B(4)(b-h)**

**(Beallsville) mining area extraction ratios for the range from 0.4225 to 0.4325 as calculated in Figures 1 and 2.**

- (b) The anticipated effects of planned subsidence upon the land and water resources identified in the subsidence control survey and survey of ground and surface water resources.

**See Addendum to Part 4, B(5)(b)**

- (c) The measures to be taken to mitigate the anticipated effects of planned subsidence to the land and water resources.



ANTICIPATED EFFECTS OF PLANNED SUBSIDENCE – SURFACE LANDS AND  
WATER RESOURCES

Tension cracking of the ground surface may occur. These cracks in the surface may vary in width from hairline, up to several inches wide. AEC believes that there will be no effect on the crop production as a result of mining. This fact is supported by a paper written by Dr. Frank L. Himes, Ph.D., entitled "Agronomic Evaluation of the Land in the Southern Ohio Coal Company Area", June, 1983. A copy is included in previous applications available to the Chief.

Slip-Prone Soils

A search of the Monroe County Soils Maps revealed one potential slide/slip areas within the following soil types: SsE.

These areas have been mapped on the enclosed map showing the limits of the application area and slip prone soils. Please note - the Soil Survey of Monroe County does not describe subsidence as a source of potential slippage. Rather, it notes soil types that are slip prone for construction sites. Of the types of slip-prone soils identified, only LpF (Lowell-Westmoreland silt loam) has been known to be slip prone during longwall mining-induced subsidence in some areas. Other soil types have been undermined before without slippage occurring.

During the pre-subsidence survey, areas known to be slip prone during subsidence, as well as other similar sites that may have a significant impact to existing structures, may be inspected. Should conditions dictate, site-specific measures, not limited to but including installation of cut-off trenches, drainage systems, and retaining walls, may be taken to minimize adverse effects.

Other Observations

In the event that horizontal movement occurs, it is expected to be in steeply sloping ground where slips have been shown to historically occur. These previously occurring slips were mainly in slip-prone soils, and this is to be expected with any future slipping. Near the center of the panel, the ground moved upwards in several small areas after subsidence as the compressive strain caused the soils to heave upward. Surface cracking up to about 6 inches wide have been shown to occur during the time the areas were put under tension. This surface cracking should be limited to only a few small isolated areas where they generally close due to compressive forces and to rainfall. Most cracks if they occur are expected to be less than 1 inch wide. In the event cracks in the soil are found that are wide enough to be considered hazardous, they will be repaired immediately by American Energy Corporation.

### Water Resources

The effect of subsidence on water resources varies greatly. The effect on wells, springs, streams, and other surface water each differ in the type and duration of effects. Each will be discussed below.

### Wells

Depending upon the depth of the well, its location within the longwall subsidence area, and its surface elevation compared to the elevation of the coal, the effect of subsidence on wells may vary from complete de-watering to some de-watering to no de-watering. Generally as the subsidence opens new places for the ground water to go, the elevation of the water decreases. The ground water is still present, but at a lower elevation. Aquicludes prevent further downward migration of water into the mine. In addition, the soft rock, particularly the clay stones in the strata, tend to swell, erode, and fill voids, causing some recovery in the elevation of the water. Wells may become completely dry temporarily, may hold less water, or as has been experienced in some instances, may not be affected. In some cases, the water level actually increases temporarily. This effect is caused by the strata being placed in compression and closing some of the joints, cracks, or bedding planes (secondary porosity features) that hold the water. However, as a general rule, the water level in wells decreases. As new surfaces are opened that water begins to flow over, the quality of the water also varies, usually temporarily. Normally, some increase in suspended solids, iron, manganese, and sulfates has been observed. These effects usually return to near normal after the water "washes" out the new chemicals.

### Springs

Springs, given the fact that they are located on the surface, generally decrease in flow and usually dry completely with little or no recovery. The water stops flowing because it is no longer at the elevation of the surface installation. The water begins to flow horizontally through different bedding planes and can be developed successfully into a spring at a lower elevation, as witnessed in past experience. Water quality varies as with wells. However, because of the increased porosity of the strata, springs developed over longwall panels, generally have higher flow.

### Effect on Streams Containing Fish

Several streams containing fish (minnows primarily) have been undermined by the longwall at the Century Mine. In some cases, the streams are un-affected by subsidence. In other cases, the stream goes dry temporarily, usually until the next major storm. In all cases, normal stream flow returned. No fish have been killed as a result of

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the stream going dry temporarily. Streams normally go dry or nearly dry for a portion of the year and fish that live there migrate downstream, only to return during the wet season.

### Streams

Impacts to streams vary according to many factors, including depth of cover, the order (drainage area size) of the stream, topography, rainfall for a period following undermining, etc. Generally, streams are temporarily affected by subsidence, decreasing in flow as cracks open in the stream bed. However, because the streams contain a high concentration of sediment during rains, the cracks fill quickly and the effect is short lived. The water re-establishes itself within several years.

It is believed that streams are impacted through two mechanisms: Fracturing of bedrock and disruption of stream gradient. When the longwall mines through an area, subsidence occurs. The land subsides immediately after the longwall advances past a point. Monitoring performed by American Energy Corp. shows that subsidence is complete within five to ten days after mining is complete. As the ground subsides, it experiences tensile and compressive forces such that existing cracks may be opened or closed, and new cracks form due to the tensile forces. In general, the additional cracking that occurs from the subsidence "wave" may cause a stream to go dry temporarily.

Subsidence occurs more in the middle of a longwall panel, compared to the sides or ends. This "differential subsidence" disrupts the gradient of the stream to where water can be observed flowing and then it disappears when the downstream bed is higher than the upstream segment. It is not uncommon to have water pool upstream of gate entries. In a few locations, the middle of the panel moves upward as the ground around it is put into compression, causing a localized "high spot." During high-flow periods, the gradient is re-established naturally.

Generally, streams are temporarily affected by subsidence, decreasing in flow as cracks open in the stream bed. However, because the streams contain a high concentration of sediment during rains, the cracks fill quickly and the effect is short lived. The water re-establishes itself within several years. Streams in this area begin from undeveloped and developed springs near the head of hollows and are fed throughout their length by springs and surface runoff. Streams that are fed by springs near the head of hollows continue to receive this groundwater, but at a lower elevation. Since rainfall is unaffected by subsidence, runoff continues to supply the water for streams.

### Other Surface Water Features

Ponds are the other surface water features in this area. Prior experience has been that ponds are not substantially affected by subsidence in this area. As subsidence proceeds through a pond, the edge of the pond that first subsides will be lower than the

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remainder of the pond until subsidence is complete. Some water could drain from the pond if the dam is subsided first, but as the remainder of the pond is subsided, this situation will end and the pond will function as before subsidence occurred. There have been no instances of ponds being dewatered as a result of subsidence. Several ponds have been undermined with no other visible effects. Cisterns, catch basins, etc. have been unaffected to date.

## MEASURES TO MITIGATE ANTICIPATED EFFECTS TO LAND AND WATER

### Damage Repairs - Wetlands

In the event of a wetland being damaged by subsidence AEC will take the proper steps to mitigate the damage. If surface cracking occurs in a wetland, the cracks will be excavated below the extents of the hydric soils, grouted or sealed with a material suitable for preventing any water loss into the cracking, and regraded or blended to conform to the rest of the wetland. If a wetland is affected by loss of either all or a portion of an existing ground water source, a portion of the wetland's hydric soils will be graded in a manner to create pooling from surface water runoff. AEC will take proper steps to minimize and avoid as much of the undamaged wetlands as possible during remediation, and native wetland vegetation will be planted in the disturbed areas graded with hydric soils. To date, AEC is currently unaware of any damage of wetlands from subsidence related to this mine or any of the adjacent mines in the #8 coal seam, and none is anticipated.

### Damage Repairs – Streams Containing Fish

Streams containing fish are generally higher order streams (perennial) in nature, and as such no subsidence is planned under perennial streams with less than 200 ft of cover to prevent stream loss. There are no perennial streams in the application area outside that range. AEC will monitor all streams as outlined in the Addendum to Part 3, Item D. In the event that a stream's flow is reduced or diminished due to longwall subsidence, AEC will notify the Division of Mineral Resource Management. AEC will also monitor the stream bed monthly up to a five year period to check for natural restoration, with all findings being reported to DMRM on a quarterly basis. If normal flow is not re-established in this five year time frame, AEC will, mitigate the subsidence damage and restore normal flow to the stream. The mitigation efforts will take place immediately after the five year monitoring period has shown no recovery from the flow loss. The type of flow interruption will first be identified to determine if it is loss do to change in grade of the stream bed or fracturing of the rock strata below the stream. For grade change the stream channel will be regarded to allow the flow an uninterrupted path and connecting the pools that typically form with grade change from subsidence. In the event the flow is lost due to surface cracks in the channel diverting the water into the ground, the cracks will be grouted with a material suitable for filling the void allowing water to continue with normal flow. Monitoring will continue during mitigation operations to ensure that proper flow has been restored. To date, no repairs have been required for streams containing fish. None are anticipated.

### Damage Repairs - Streams

It is believed that streams are impacted through two mechanisms: Fracturing of bedrock and disruption of stream gradient. When the longwall mines through an area,

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subsidence occurs. The land subsides immediately after the longwall advances past a point. AEC's monitoring shows that subsidence is complete within five to ten days. As the ground subsides, it experiences tensile and compressive forces such that existing cracks may be opened or closed, and new cracks form due to the tensile forces. In general, the additional cracking that occurs from the subsidence "wave" may cause a stream to go dry temporarily. After several months, and following several significant rainfall events, naturally occurring sediment fills the cracks and the streams tend to heal themselves following subsidence. Flow is re-established after several months when sufficient rainfall has occurred to fill any cracks and to replenish the water table to allow water to rise into the streambed.

Subsidence occurs more in the middle of a longwall panel, compared to the sides or ends. This "differential subsidence" disrupts the gradient of the stream to where water can be observed flowing and then it disappears when the downstream bed is higher than the upstream segment. It is not uncommon to have water pool upstream of gate entries, requiring some minor re-grading of the stream to re-establish the gradient for the entire length of the stream. In a few locations, the middle of the panel moves upward as the ground around it is put into compression, causing a localized "high spot." During high-flow periods, the gradient is re-established naturally. Occasionally, some fieldwork is necessary so the process occurs faster.

Recently, sister company The Ohio Valley Coal Company (OVCC) has conducted a study of streams (all types – perennial, intermittent, ephemeral) undermined by the OVCC Powhatan #6 longwall operations. In the last several years, The Powhatan No. 6 Mine has undermined several streams. We concentrated our efforts on main streams that were undermined within the last six years. We discovered that approximately 89 percent of the nearly 50,000 ft of streams were flowing. The remaining 11 percent are located in remote areas requiring some gradient work to re-establish flow for the entire length of the stream. This evaluation was performed in September 2006 when flow conditions were low. There had been no rain for several days, so we believe that the conditions were appropriate for this evaluation. Table 1 shows the results of the field evaluation.

**Table 1 Stream Recovery 1999 – 2005**

<b>Mined From</b>	<b>Mined To</b>	<b>Total Length (ft)</b>	<b>Non-Flowing Length (ft)</b>	<b>Flowing Length (ft)</b>	<b>Percent Flowing</b>
Sep-05	Sep-06	1121		1121	100%
Sep-04	Sep-05	6555		6555	100%
Sep-03	Sep-04	19172	-3094	16078	84%
Sep-02	Sep-03	10112	-388	9724	96%
Sep-01	Sep-02	4968	-1337	3631	73%
Sep-00	Sep-01	5430	-554	4876	90%
Sep-99	Sep-00	2501		2501	100%

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SINCE SEP-99	Totals	49859	-5373	44486	89%
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Stream flow appears to be independent of time, and appears to be more dependent on establishing the proper flow gradient. Streams undermined only one or two years before the study date (September 2006) were flowing for their entire length, as were streams undermined seven years before the study date. However, there were streams undermined only four years before the study date, where only 73 percent of the stream length was flowing. These latter streams had little re-grading work done to date. If these streams do not recover naturally, OVCC plans to re-establish the gradient of the stream.

As is typical for Southeast Ohio headwaters a large percentage of the streams in the area are intermittent, meaning that there is no detectable flow during the dry seasons of the year. In its adaptation to the climate in the area, the local wildlife tends to migrate as these streams experience changes in flow throughout the year. The perennial streams, streams generally of higher order flowing year round, in the area are not planned to be subsided where there is less than 200 ft of cover to prevent stream loss.

AEC will monitor all streams as outlined in the Addendum to Part 3, Item D. In the event that a stream's flow is reduced or diminished due to longwall subsidence, AEC will notify the Division of Mineral Resource Management. AEC will also monitor the stream bed monthly up to a five year period to check for natural restoration, with all findings being reported to DMRM on a quarterly basis. If normal flow is not re-established in this five year time frame, AEC will, mitigate the subsidence damage and restore normal flow to the stream. The mitigation efforts will take place immediately after the five year monitoring period has shown no recovery from the flow loss. The type of flow interruption will first be identified to determine if it is loss due to change in grade of the stream bed or fracturing of the rock strata below the stream. For grade change the stream channel will be regarded to allow the flow an uninterrupted path and connecting the pools that typically form with grade change from subsidence. In the event the flow is lost due to surface cracks in the channel diverting the water into the ground, the cracks will be grouted with a material suitable for filling the void allowing water to continue with normal flow. Monitoring will continue during mitigation operations to ensure that proper flow has been restored.

#### Damage Repairs – Cisterns

To date, no repairs have been required for cisterns. If repairs were needed, it would include either replacement of the cistern with a new or used cistern, or could include patching the existing cistern with grout.

#### Damage Repairs – Wells

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Water levels in wells may decrease due to subsidence, reducing the capacity of the well. To remedy this situation, wells may be deepened to restore the reservoir. Dug wells may be grouted to allow them to hold water.

Damage Repairs – Ponds

Pond repairs have not been required to date. If a pond begins to leak after subsidence, clay could be used to seal the leaks. If the dam is damaged, it could be excavated and re-compacted to restore its use. If the decant pipe is damaged, it could be repaired or replaced.

Damage Repairs - Springs

Spring collection systems have not required repairs to date. If the spring collection system (i.e., tile) is damaged, it could be repaired or replaced to permit the spring to collect water. If the watering trough is damaged, it could be repaired or replaced. If the drain pipe from the watering trough is damaged, it could be repaired or replaced. In the event of dewatering of the actual groundwater spring source, attempts would be made to develop a spring at a lower elevation location or grout near a dewatered spring.

Damage Repairs - Surface Lands

If subsidence due to mining operations causes slippage which reduces the value or reasonably foreseeable use of the surface land, AEC will restore the land to a condition capable of supporting uses it was capable of supporting before subsidence. If slips are triggered by mining activities, these areas would be stabilized in accordance with accepted site specific procedures for such work if technologically and economically feasible. If not feasible, AEC will arrange alternative measures to mitigate the damage.

1. Notwithstanding its mining rights and without waiving nor releasing any of its rights, AEC will make repairs of damage caused to surface lands by AEC's mining operations if the damage reduces the foreseeable use or value of the surface lands. If such damages occur, AEC will submit to the Chief within thirty days after the damage occurs:

- a.) Site specific plans for the repair or mitigation of the damage, including a time schedule for performance of the remedial action.
- b.) A request for more time to prepare such plans; or
- c.) Written notification that AEC believes that repair or restoration measures are not technologically feasible, in which case other measures will be described; or if repair or restoration measures are not desired by the owner.



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2. Damage to surface lands will be repaired by local contractors. As surface damage occurs, the landowner will be notified and permission to repair the damage will be requested. Surface cracks will usually be repaired by the following method. After the length of the subsidence crack has been determined, a trench will be made in the crack. During the excavation topsoil will be segregated from subsoil and rock. Upon completion of the excavation, the material will be compacted using the track of the bulldozer or the wheel of the backhoe. Once the soil material has been replaced, the area will be seeded as a hayfield, pasture field, or yard.

AEC will employ a program to monitor surface cracking and settling resulting from subsidence. Areas being mined will be inspected at various intervals, ranging from daily to weekly. These areas will be visually inspected for the subsidence related problems. If a problem is found, the landowner will be notified immediately.

In most cases, surface cracks are expected to open and close in a relatively short period of time, however, some cracks may take weeks to close. For this reason, most cracks will not be repaired until AEC determines that the cracks are not going to close themselves. If the surface cracks are in an area that is commonly traveled by man or livestock, the cracks will be repaired immediately. Surface cracking that is found in areas not commonly traveled, may be marked with brightly colored tape. This tape will alert anyone in the area of the depression or opening. If the cracks do not close within the period of time AEC determines is adequate, a contractor will repair the cracks.

Monitoring of these areas will continue for up to six months after mining, and if the cracks reopen, they will once again be repaired. Monitoring of panel areas before mining consists of visual inspection or aerial photo review. AEC's subsidence control program will adequately assure that the value and reasonably foreseeable use of the surface land is maintained.

**See Addendum to Part 4, B(5)(c)**

- (d) The anticipated effects of planned subsidence upon the structures identified in the subsidence control survey.

**See Addendum to Part 4, B(5)(d)**

- (e) The proposed measures to be taken to mitigate anticipated effects to structures.

**See Addendum to Part 4, B(5)(e)**

- (f) The proposed measures to determine the extent of mining related damages including a pre-subsidence survey with an indication of the timing of the survey.

**See Addendum to Part 4, B(5)(f)**

- (g) The provisions for repair and/or compensation for damages to structures.

**See Addendum to Part 4, B(5)(g)**

- (h) Describe the monitoring, if any, needed to determine the commencement and degree of subsidence so that, when appropriate, other measures can be taken to prevent, reduce, or correct material damage in accordance with rule 1501:13-12-03 of the Administrative Code.

**See Addendum to Part 4, B(5)(h)**

- (6) Will planned subsidence operations be conducted within the angle of draw of urbanized areas, cities, towns, communities, industrial or commercial buildings, major impoundments, or perennial streams?

Yes ☒ No ☐ If "yes," describe any measures or activities that will prevent a condition or practice that could result in an imminent danger to the health or safety of the public.

**See Addendum to Part 4, Item 6.**

- (7) Will planned subsidence operations be conducted within the angle of draw of transmission pipelines?

Yes ☐ No ☒ If "yes," describe the procedural plan to avoid the creation of a situation of imminent danger to the health and safety of the public.

### ANTICIPATED EFFECTS - SURFACE STRUCTURES

#### Structures

Structures situated over a panel or within the angle of draw may be damaged due to subsidence. Structures are defined as houses, barns, sheds, garages, silos, when the longwall passes directly under a structure, the structure experiences first moderate tensile stress, then moderate compressive stress. As the structure subsides, the end that was undermined first subsides first, causing some tilting away from the advancing face. As the surface over the panel subsides, it takes on the shape of a trough, with the edges remaining in tension and the center in compression. Because the AEC Century longwall face moves quickly, damage to structures from this type of movement is minimized.

The damage that may be expected may involve cracking of plaster, cracking of concrete block or brick, cracking of dirt and cement floors, cracking along mortar joints, and separation of existing cracks. Cracks may close partially or completely after subsidence is complete. Additions to houses may separate away from the original structure. Cracks that occur during separation may close partially or completely after subsidence is complete.

#### Roads

There are several public roads crossing the mining area, being ODOT State Route 145 and Sunbury Township Roads 1011 and 137. AEC posts bonds for all roads to be undermined. The effect of mining on public roads is limited to minor cracking of the pavement or road surface from tension and in a few instances, humping of the surface due to compression. In all instances, the roads have never been closed and repairs have been made by the governing authority and reimbursed by AEC. Roads are inspected frequently during subsidence, and AEC works closely with the governing authority throughout the mining and subsidence.

#### Utility Installations

AEC anticipates little to no impact on the utility installations over the proposed application area. Utility lines (public water, public sanitary sewer, electric, etc.), undergo little or no damage due to subsidence over the underground mining area. The utility lines that are typically damaged are county water lines made of asbestos concrete. No such construction is found in the application area. Other construction materials withstand subsidence well.

#### Public Baseball Field

There is a public baseball field with dugouts and concession stand on the south side of Crum Road but these are just outside the angle of draw. AEC anticipates little to no impact on this field facility.

MITIGATING MEASURES  
ANTICIPATED EFFECTS TO SURFACE STRUCTURES

Damage to Buildings (houses, barns, sheds, garages, etc.)

AEC will notify the owners of the buildings at least six months prior to undermining the buildings. In the event that the buildings are permanently damaged as a result of subsidence, AEC, at the request of the owner, will pay to repair the buildings to their pre-mining conditions.

Damage to Public Roads

AEC will notify the appropriate road authority at least six months prior to undermining the road. AEC will inspect the areas around roads located on steep areas that could be subject to slippage and will repair surface cracks in these areas immediately if necessary to keep water from causing the soil to slip. In the event that roadways are permanently damaged by subsidence, AEC, at the request of the road authority, will pay to repair the road surface to its pre-mining condition.

Damage to Public Water Lines

AEC will notify the owner of public water lines at least six months prior to undermining the lines. In the event that the pipelines are damaged by subsidence, AEC, at the request of the public water line authority, will pay to repair the pipeline to its pre-mining conditions. As of May 2003, there have been 32.5 miles of public water lines undermined by longwall mining since January 1990 for the sister mine Powhatan No. 6. During that time, many types of water lines have been undermined, including asbestos-concrete lines, HDPE lines, and PVC lines. During this time period, only one (1) break occurred, and it was located at the start of a longwall panel. This pipe was an asbestos-concrete line, and the construction was such that the end of the pipe broke off when subjected to subsidence forces. There are no asbestos-concrete pipes located within the application area. Should damage occur, however unlikely, the County repairs its own lines and AEC reimburses them.

Damage to Other Utility Lines

AEC will notify the owner of other utility lines (electric lines and sub-stations) at least six months prior to beginning work at the proposed permit area and will take measures to protect the lines that traverse the proposed permit area. At least six months prior to undermining the lines is given to allow the utility owners to take measures deemed necessary and proper to protect their property and the public health and safety. In the event that the utilities are damaged by subsidence, AEC, at the request of the utility owner, will pay to repair the affected utility to its pre-mining conditions.

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Notice of Mining

AEC will mail written notice to owners and occupants of surface property or structures of AEC's intent to mine under such property or structures at least six months prior to any mining by AEC under their property.

Pre-Subsidence Survey

A pre-subsidence survey of all structures to be undermined will be conducted by AEC personnel or by someone contracted to do this work and will be used to determine the condition of the structures and facilities prior to the mining unless a private agreement exists between AEC and the landowner. This survey may include, but not limited to: still and video photography; land surveying; making various measurements; interviewing landowners, tenants, or other individuals; and making various drawings. This survey will be performed in accordance with Underground PPD 90-3. Refusal of the landowner to allow a pre-subsidence survey will result in the amount of damage caused by subsidence to be indeterminate. In such cases, AEC will enforce the terms of its deed language, which deeds represent valid agreements between the coal owner and the owner of the surface estates and address all damage that may occur due to the removal of all coal. Such agreements vary from tract to tract, but are shown in the Addendum to Part 1, Item C (8)(b).

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PERMIT D-0425-15  
ADDENDUM TO PART 4, B(5)(g)

After mining, structures will be repaired or replaced as required by law or the owner will be compensated for the diminution in value to the extent required by law. A private agreement may be used to satisfy the requirements of OAC 1501: 13-12-03.

Repair of and compensation for damage under the terms and conditions of OAC 1501: 13-12-03(F) and (H) can be determined only after review and analysis of the damage in each particular situation. AEC will comply with all legal requirements if subsidence damages occurs.

AMERICAN ENERGY CORPORATION  
CENTURY MINE  
PERMIT D-0425-15  
ADDENDUM TO PART 4, B(5)(h)

After American Energy Corporation (AEC) has completed its pre-subsidence survey, AEC will notify the Division of Mineral Resource Management if a private agreement (pursuant to OAC 1501: 13-12-03(E) between AEC and the landowner exists. If no agreement exists, the Division of Mineral Resource Management, after discussions with AEC, will decide the need for any monitoring of the structure(s). If monitoring is required, AEC will submit a plan for the monitoring. If, prior to subsidence, a private agreement is reached, AEC shall be released from any and all monitoring requirements.

MEASURES TO PREVENT IMMINENT DANGER

COMMERCIAL AND OTHER BUILDINGS

Commercial buildings in the permit area consist of the Johnson Construction building. Residential and unoccupied structures existing both within the Village of Beallsville and the permit limits are on properties owned by Caldwell, Dillon, Hamilton and Lucas. These structure are similar to other buildings that experience subsidence, and there are few if any conditions that would constitute imminent dangers. AEC will work with the owners to monitor the condition of the structure and determine if any conditions constitute an imminent danger. If such a condition is found, AEC will notify the owner to allow measure to be taken to protect the health and safety of the public. AEC accepts its obligation to conduct mining operations in a manner that does not threaten the health or safety of the public. AEC's years of experience subsidizing structures (including buildings and trailers) with the planned, predictable, and controlled subsidence associated with longwall mining supports its conclusion that undermining commercial buildings such as the Johnson Construction building, as well as the other occupied and unoccupied structures within the Village limits, will not create an imminent danger to either the owner-occupiers' safety or the safety of any members of the public who may happen come onto the premises during undermining. However, AEC will offer to work with the owners to monitor the structures during subsidence to assure a dangerous condition does not develop.

PERENNIAL STREAMS

There is one perennial stream located east of Twp. 12 defined by sites U-8/D-8A and flowing into Reed's impoundment P-34.11. This stream is under a minimum cover of ~380' and maximum of ~460'. There should be no safety hazards or imminent danger to the public associated with potential subsidence under this stream based on the amount of cover.

During subsidence, the area of the stream to be undermined will be inspected daily during subsidence to assure that there are no conditions that could result in an imminent danger to the health or safety of the public. Should such a condition be found, signs will be posted to alert persons that an imminent danger exists. Furthermore, the area where such conditions exist will be cordoned off to prevent the public from accessing the site.



## **PART 5: FORMAT AND CONTENT**

### **A. FILING OF ADDENDA**

If an addendum is needed to present the information required by the items in the permit application, the addendum is to be submitted with the permit application and each page, map, plan or other document in the addendum should include the applicant's name and indicate to what item the addendum applies. For example, "Addendum to Part 3, item A (11)(c)Zebco Coal Company."

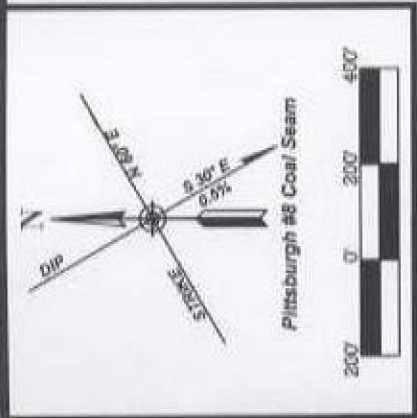
B. Provide the information requested below for all technical data submitted in the application.

Identification of Technical Data *	Person/Organization that Collected Data and Date	Methodology for Collecting Data	Person/Organization that Collected Data and Date	Methodology Used to Analyze Data
Hydrologic Inventor	Fred Blackman, Quality Environmental Services	Grab Samples and interviews	Richard Whitt/Tra-Det Inc., 2008 - 2010	Analyze as necessary for parameters.
Hydrologic Inventor	Fred Blackman, Quality Environmental Services	Grab Samples and interviews	Ila Maniar/Industrial Labs Analysis, Inc. 2010	Analyze as necessary for parameters.
Drilling Report-Underground	Kerogen Resources, 1994, 2000, 2002, 2005,	Core Drill	Unknown/Tra-Det 1994, 2000, 2002, 2005	Analyze as necessary for parameters.
Drilling Report-Underground	L.J. Hughes & Sons, Inc, 1994	Core Drill	Unknown	Analyze as necessary for parameters.
Drilling Report-Underground	B.B.R. Drilling, 1994	Core Drill	Unknown	Analyze as necessary for parameters.
Drilling Report-Underground	McKee Drilling, 2005	Core Drill	Unknown, Tra-Det 2005	Analyze as necessary for parameters.
Drilling Report-Underground	West Virginia Resources, 2008-2010	Core Drill	Luther Hendricks/Tra-Det 08-2008-2010	Analyze as necessary for parameters.

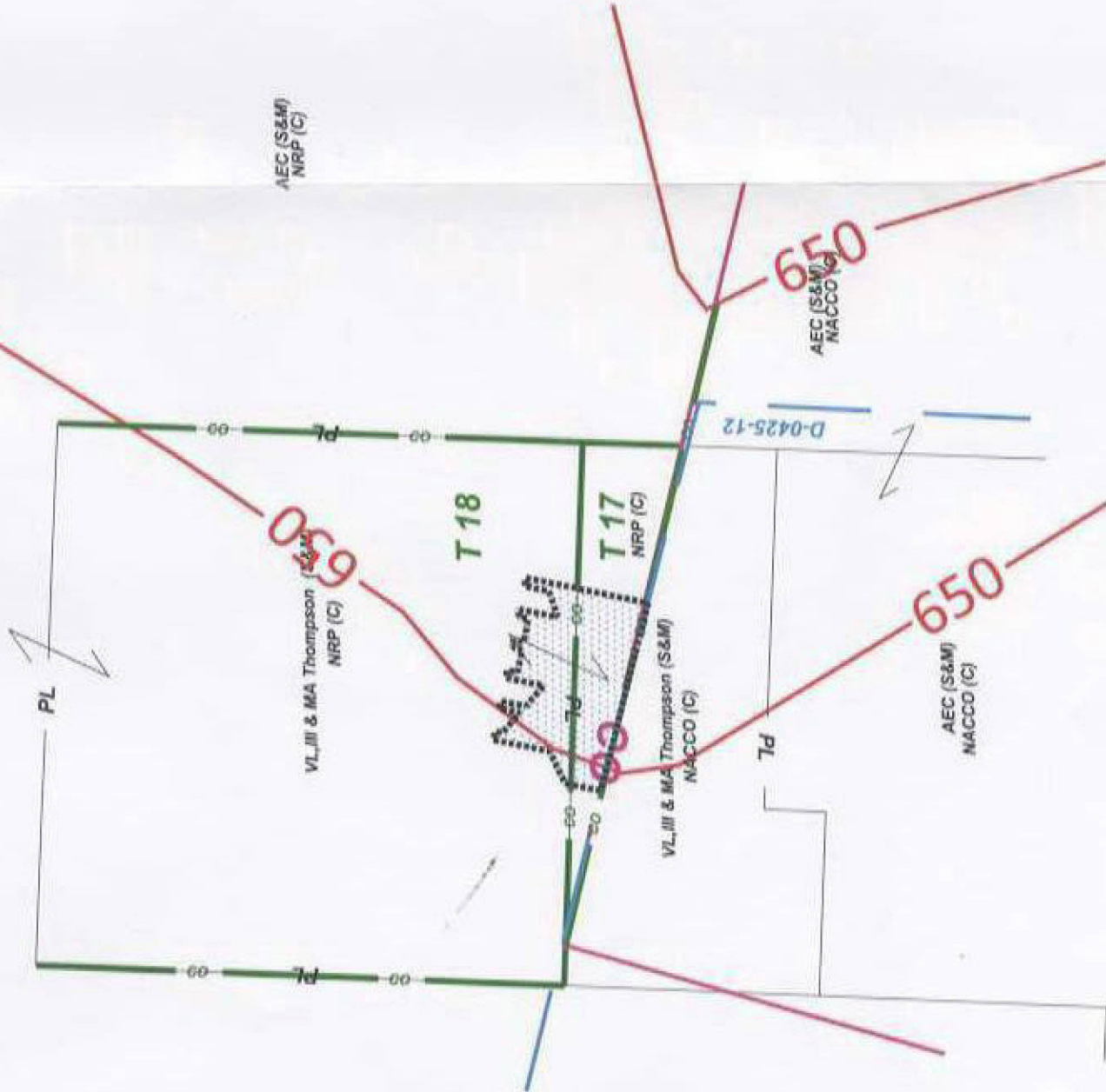
\* The technical data is to be identified by referencing the particular item in the application for which the data was used in preparing the response (e.g. Part 2, B (1); Hydrologic Analyses; Part 4, A.

- C. Provide the following information for each private or academic research organization or governmental agency contacted in the preparation of the application for information on land uses, soils, geology, vegetation, fish and wildlife, water quantity and quality, air quality, and archeological, cultural, and historic features.

Name and Address of Agency/Organization	Name, Position and Phone Number of Contact Person	Type of Information (e.g. Geology)
<b>ODNR, Division of Water, 2045 Morse Road Bldg. B-3, Columbus, Ohio 43229-6693</b>	<b>K. Sprowls, Hydrogeologist (614) 265-6690</b>	<b>Hydrology</b>
<b>TraDet Inc. P.O. Box 2019 Wheeling, WV 26003</b>	<b>R. Whitt, Analyst, (304) 547-9094</b>	<b>Water Sample Analysis</b>
<b>Industrial Laboratory Analysis 2240 Williamsburg Drive Glen Dale, WV 26038-1128</b>	<b>Ila Maniar, Analyst, (304) 233-5595</b>	<b>Water Sample Analysis</b>
<b>Geological Records Center 4283 Fountain Square Court Columbus, Ohio 43224</b>	<b>ODNR, Division of Geological Survey (614) 265-6860</b>	<b>Oil/Gas Well Logs</b>
<b>William J. Siplivy, P.E., Inc. 4667 Turnberry Trail Stow, Ohio 44224</b>	<b>William J. Siplivy, Mining Engineer and Geologist (330) 678-0027</b>	<b>Pillar Stability Analysis</b>
<b>Natural Resource Conservation Service 1119 East Main Street Barnesville, OH 43713</b>	<b>Mr. Jeff Bettinger (740) 425-1100 x102</b>	<b>Slip Prone Soils Part 4, Item B5(b)</b>



Note: 1. AEC = American Energy Corporation



AEC (S&M)  
NRP (C)

AEC (S&M)  
NACCO (C)

AEC (S&M)  
NACCO (C)

- 650- Index Coal Contour  
Pittsburgh No. 8 Coal Seam
- (S) Surface Owner - As Shown
- (M) Mineral Owner - As Shown
- (C) Coal Owner - As Shown
- (L) Lessee - AEC \*\*



Year 1

- PL— Property Line
- Section Lines
- - - Existing Application
- CO- Coal Lease Line
- Application Boundary-2.5 Ac

I, the undersigned, hereby certify that this map is correct, and shows to the best of my knowledge and belief all the information required by Chapter 1513 of the Revised Code and Rules adopted thereunder.

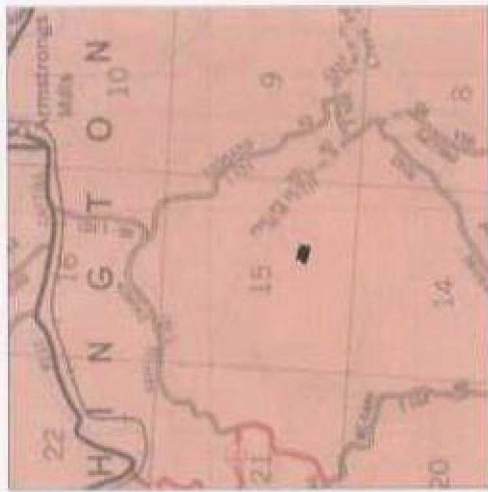
ACKNOWLEDGED BEFORE ME A NOTARY PUBLIC THIS 15th DAY OF December, 2010

DENISE R. JACKSON  
Commission Expires 09/25/2012

REG. SURVEYOR #

NOTARY PUBLIC  
STATE OF OHIO

NOTARY PUBLIC



### LOCATION MAP

Scale 1" = 1 Mile  
Mapping From Belmont County Highway Map  
Drainage Basin: Captina Creek  
Located Within the Armstrong Mills  
USGS 7.5 Minute Quadrangles

1	JRS	10/07/10
No.	Revision/Draftsman	Date

**American Energy Corporation**

43821 Mayhugh Hill Road  
Beaumont, Ohio 43715

Phone: 740.926.9133 Fax: 740.926.9138

### ADDENDA TO PART 4, B(1)

**Structure Contour/ Timing/  
Coal Deed Map**

Situated in Washington Township  
Belmont County, Ohio  
Section: 15

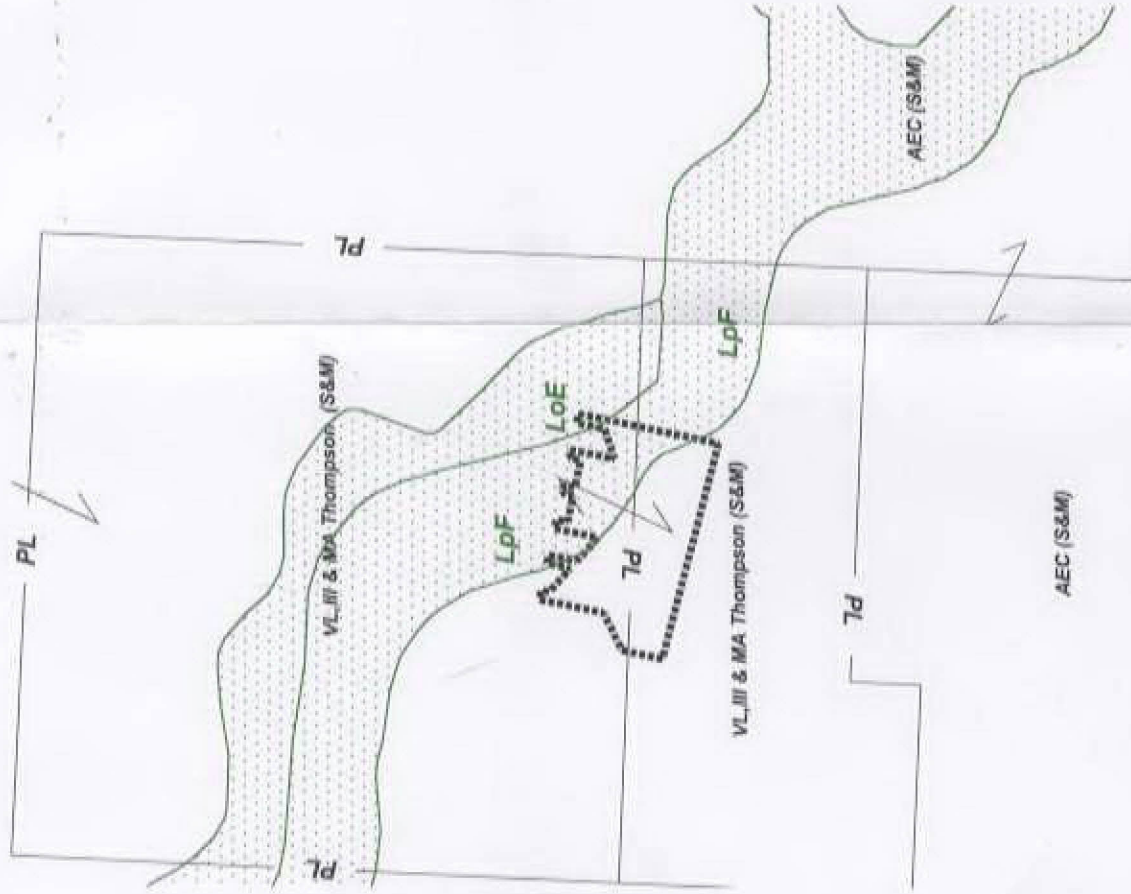
Project:	Application D-0425-15
Date:	August 25, 2010
Scale:	1" = 400'
Drawn By:	JRS





Map Data Source:

Soil Survey of Belmont County, Ohio  
United States Department of Agriculture, Soil Conservation Service in cooperation with  
Ohio Department of Natural Resources, Division of Lands and Soil, and Ohio Agricultural research and Development Center.



Note: AEC = American Energy Corporation

- Application Boundary-2.5 Ac
- Property Line
- Section Lines
- Application Boundary-2.5 Ac

- (S) Surface Owner - As Shown
- (M) Mineral Owner - As Shown
- (C) Coal Owner - As Shown
- (L) Lessee - AEC \*\*



LOCATION MAP

Scale 1" = 1 Mile  
Mapping From Belmont County Highway Map  
Drainage Basin: Captina Creek  
Located Within the Armstrong Mills  
USGS 7.5 Minute Quadrangles

1	JRS	10/07/10
No.	Revision/Draftsman	Date

American Energy Corporation

43321 Mayhugh Hill Road  
Beallsville, Ohio 43715  
Phone: 740.926.9152 Fax: 740.926.9136

Slip Prone Soils Map  
Situated in Washington Township  
Belmont County, Ohio  
Sections: 15

Project: Application D-0425-15  
Date: August 25, 2010  
Scale: 1" = 400'  
Drawn By: JRS



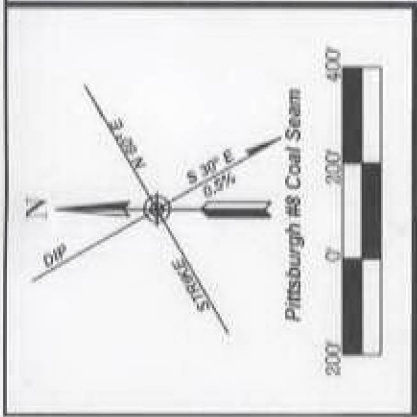
I, the undersigned, hereby certify that this map is correct and shows to the best of my knowledge and belief all the information required by Chapter 1513 of the Revised Code and Rules adopted thereunder.

Charles R. Kaluger 7109  
REG. SURVEYOR #  
ACKNOWLEDGE BEFORE ME A NOTARY PUBLIC THIS 25th DAY OF August 2010.  
DENSE B. JACKSON  
Notary Public, State of OHIO  
My Commission Expires 09/26/2015

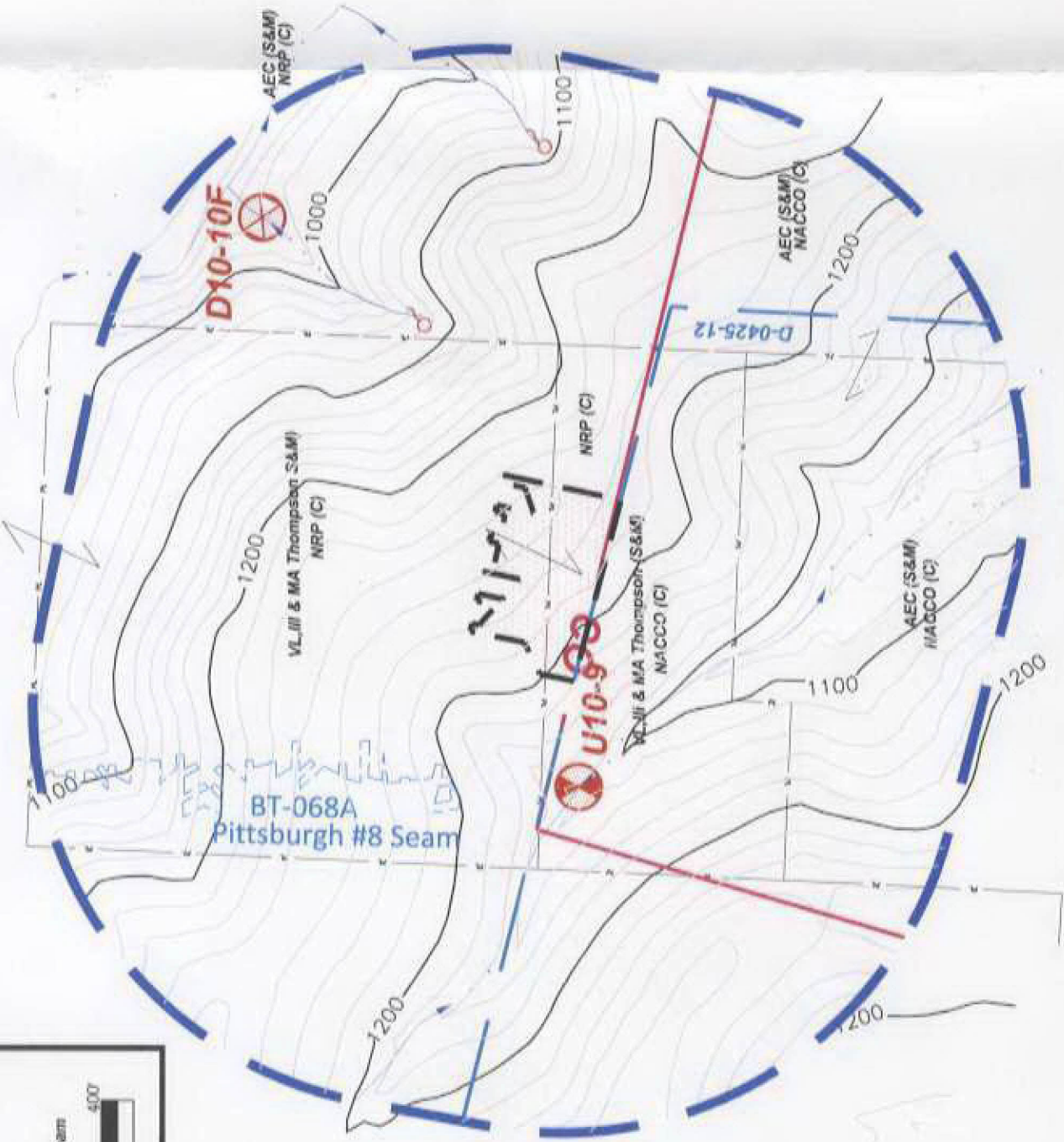


7109





- Note: 1. AEC = American Energy Corporation  
2. NRP = Natural Resource Partners  
3. NACCO = North American Coal Company



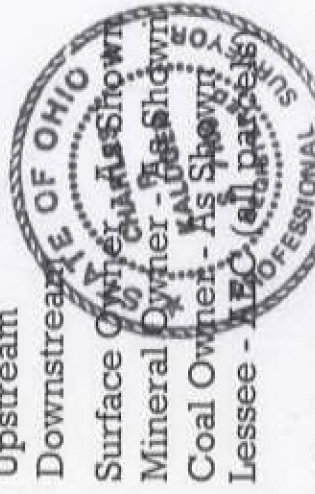
- Old Mine Workings
- Partial Recovery-Zero Subsidence Room and Pillar-2.5 Ac
- Contours 20' Intervals
- Index Contours 100' Intervals
- Intermittent Stream
- Perennial Stream
- Property Line
- Section Lines
- Existing Application
- 1000' Hydrologic Boundary
- Application Boundary-2.5 Ac

### LOCATION MAP

Scale 1" = 1 Mile  
Mapping From Belmont County Highway Map  
Drainage Basin: Captina Creek  
Located Within the Armstrong Mills  
USGS 7.5 Minute Quadrangles



- Coal Lease Line
- Sampling Station
- Water Impoundment
- Developed Spring
- Undeveloped Spring
- Drilled Well
- Dug Well
- Upstream
- Downstream
- Surface Owner - As Shown
- Mineral Owner - As Shown
- Coal Owner - As Shown
- Lessee - AEC (all parcels)



I, the undersigned, hereby certify that this map is correct and shows to the best of my knowledge and belief all the information required by Chapter 1513 of the Revised Code and Rules adopted thereunder.

*Charles R. Kelly*  
REG. SURVEYOR # 7109



ACKNOWLEDGEMENT: A NOTARY PUBLIC THIS 21st DAY OF December 2010  
Notary Public, State of Ohio  
*Charles R. Kelly*  
NOTARY PUBLIC

2	JRS	12/21/10
1	JRS	10/7/10
No.	Revision/Draftsman	Date

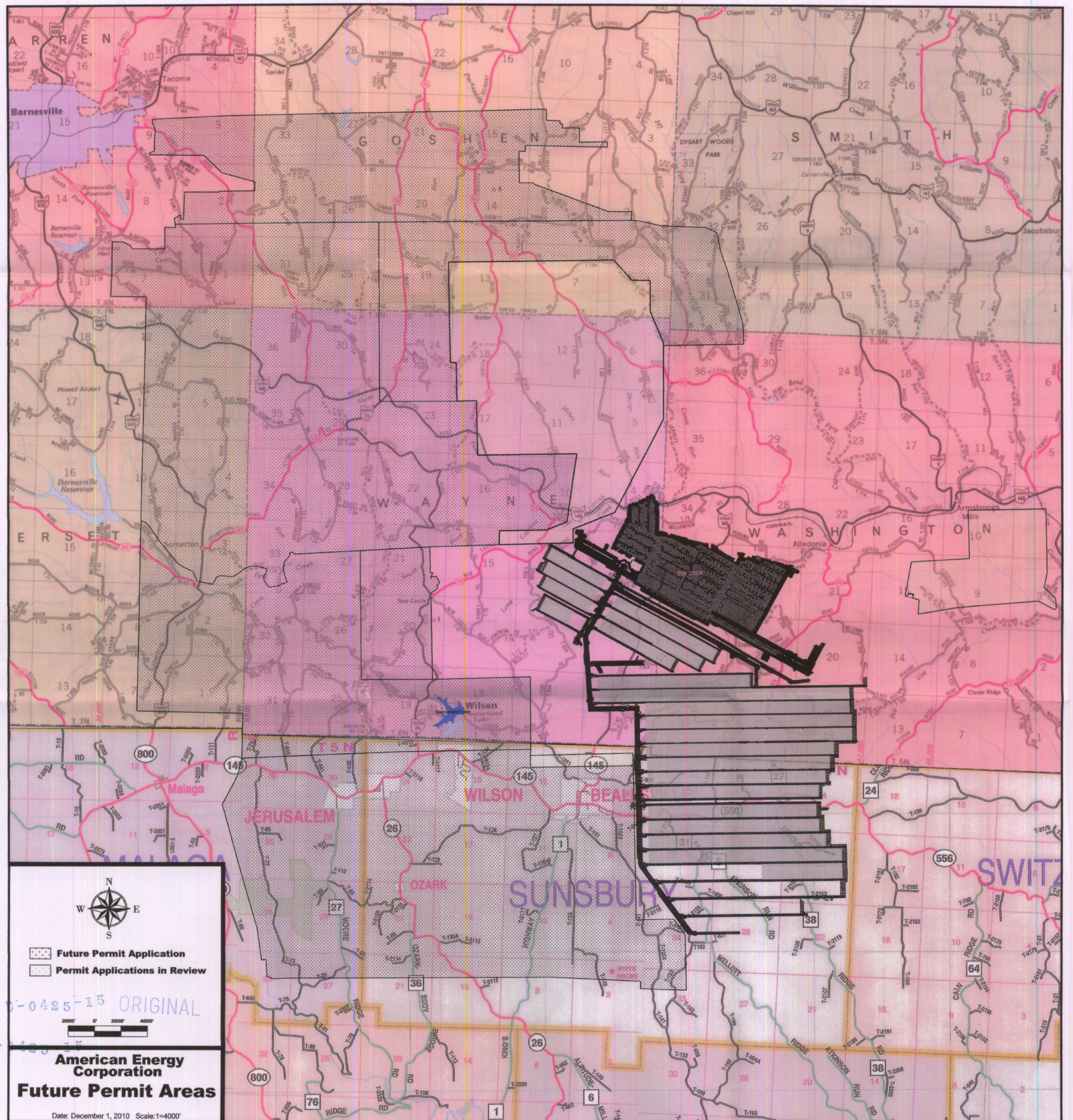
## American Energy Corporation

43821 Mayhugh Hill Road  
Beallsville, Ohio 43715  
Phone: 740.926.9152 Fax: 740.926.9138

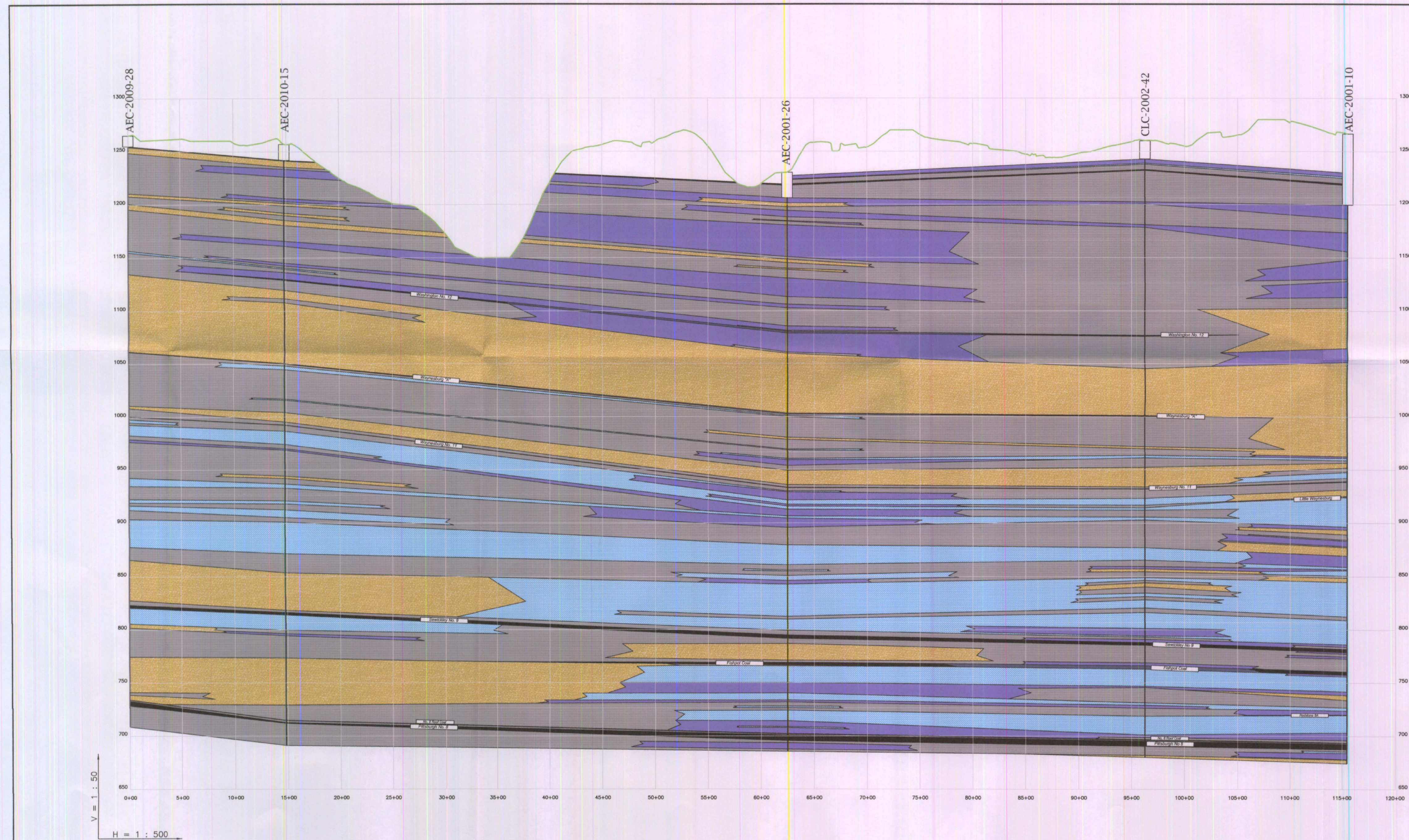
Application and Hydrology Map  
Situated in Belmont County, Washington Township  
T-6N R-4W  
Section: 15

Project	Application D-0425-15
Date	August 25, 2010
Scale	1" = 400'
Section	JRS







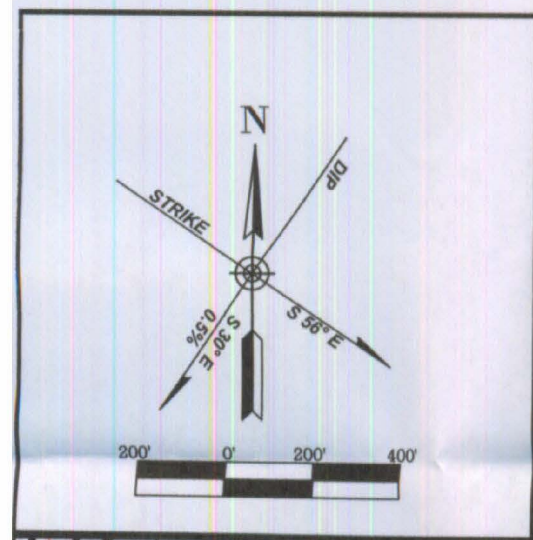


<p><b>Legend</b></p> <p>□ Casing/Core Loss</p> <p>■ Sandstone</p> <p>■ Claystone</p> <p>■ Shale</p> <p>■ Limestone</p> <p>■ Coal</p>		
1	1st Draft/RCC	100630
No.	Revision/Draftsman	Date
<p>F:\Work\AEC\logo.bmp</p> <p>43621 Mayhugh Hill Rd Beallsville, OH 43716</p> <p>Phone: 740.926.9182 Fax: 740.926.9138</p>		
<p><b>Geologic Cross Section A-A'</b></p> <p><b>Along Dip of Coal Seam</b></p> <p>Sheet 1 of 1</p>		
<p>Project: American Energy Corporation</p>		
<p>Date: August 25, 2010</p>		
<p>Scale: Vertical: 1" = 50' Horizontal: 1" = 500'</p>		









Wayne Twp. Belmont County  
Sunsbury Twp. Monroe County

7 1  
12 6

Wayne Twp. Belmont County  
Sunsbury Twp. Monroe County  
T-6 N R-5 W  
T-5 N R-5 W

1  
6

31  
36

T-5 N R-5 W  
T-4 N R-4 W

Sunsbury Twp. Monroe County  
Sunsbury Twp. Monroe County



I, the undersigned, hereby certify that this map is correct, and shows to the best of my knowledge and belief all the information required by Chapter 1513 of the Revised Code and Rules adopted thereunder.

*Charles R. Kaluger* 7109  
REG. SURVEYOR #  
ACKNOWLEDGED BEFORE ME A NOTARY PUBLIC THIS 20th DAY OF June 2010.

DENISE R. JACOBSON  
Notary Public, State of Ohio  
My Commission Expires 09/28/2015

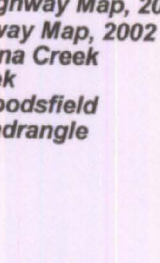
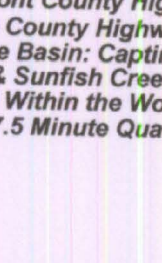
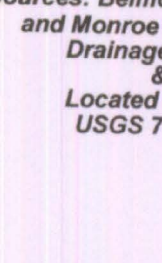
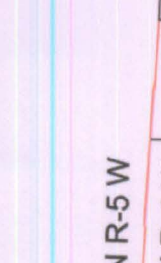
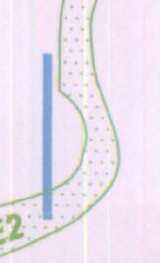
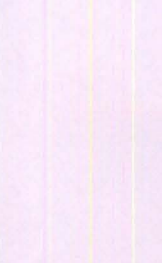
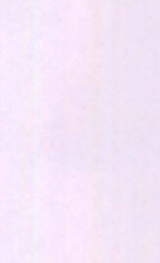
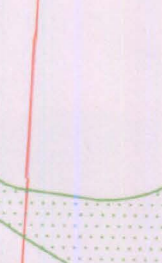
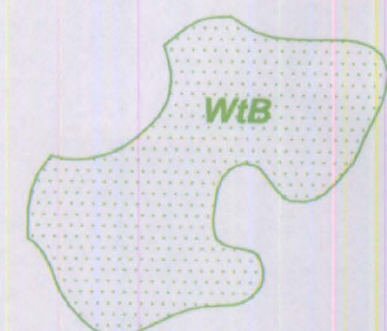


**LOCATION MAP**  
Scale 1" = 1 Mile  
Sources: Belmont County Highway Map, 2003  
and Monroe County Highway Map, 2002  
Drainage Basin: Captina Creek  
& Sunfish Creek  
Located Within the Woodsfield  
USGS 7.5 Minute Quadrangle

D-0425-14

D-0425-14

D-0425-3



**Map Data Source:**

Soil Survey of Belmont County, Ohio  
United States Department of Agriculture, Soil Conservation Service in cooperation with  
Ohio Department of Natural Resources, Division of Lands and Soil, and  
Ohio Agricultural Research and Development Center.  
July 1981

**AND**

Soil Survey of Monroe County, Ohio  
United States Department of Agriculture, Soil Conservation Service in cooperation with  
Ohio Department of Natural Resources, Division of Lands and Soil, and  
Ohio Agricultural Research and Development Center.  
March of 1974

- Slip Prone Soils
- Application Boundary-162.7 Ac
- Section Lines
- Township Line
- Existing/Pending Applications

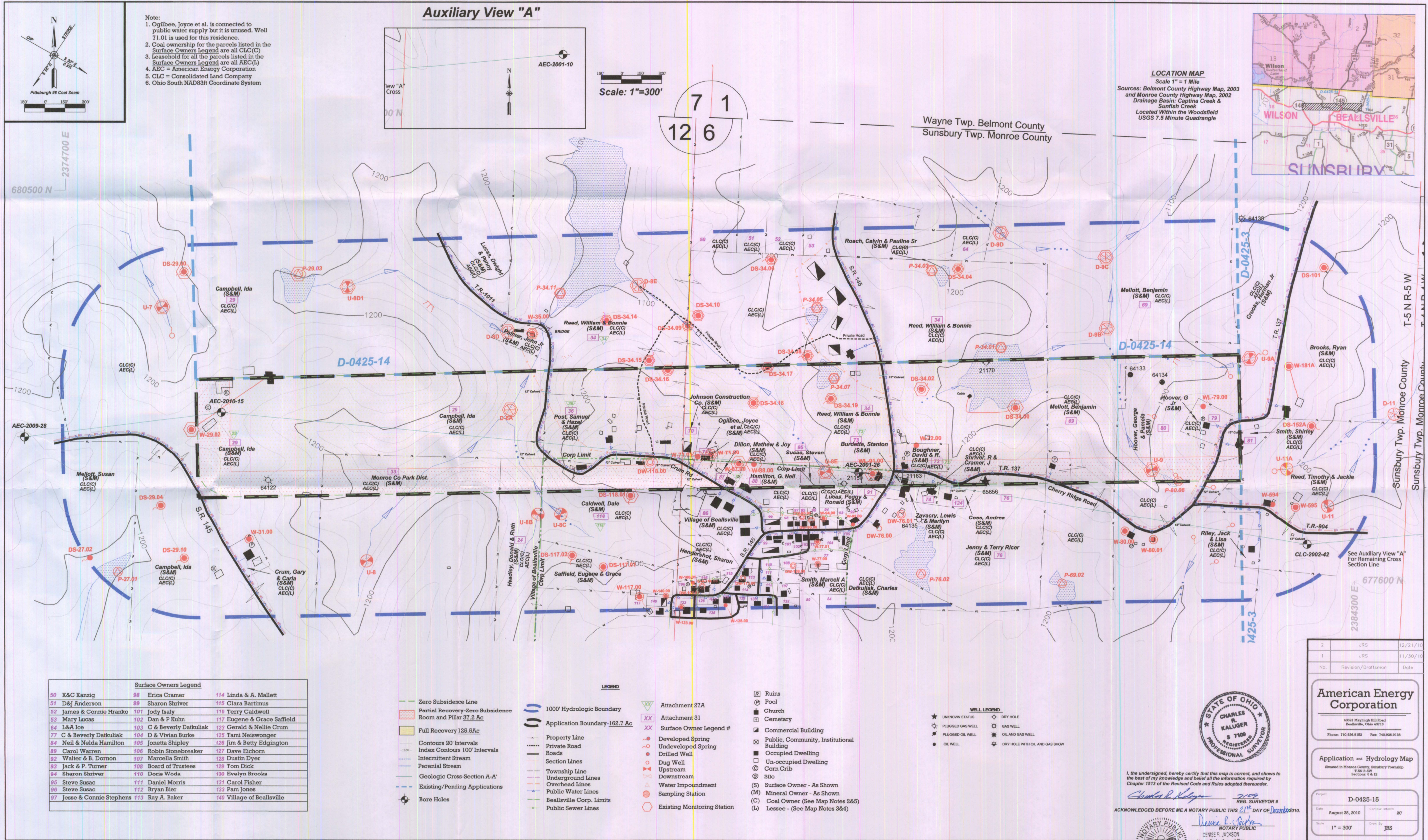
**American Energy Corporation**

43821 Mayhugh Hill Road  
Bealsville, Ohio 43716  
Phone: 740.926.9182 Fax: 740.926.

**Slip Prone Soils Map**  
Situated in Sunbury Township  
Monroe County, Ohio  
Sections: 6 & 12

Project: D-0425-15  
Date: August 25, 2010  
Scale: 1" = 400'





Note:  
1. Ogilbee, Joyce et al. is connected to public water supply but it is unused. Well 71.01 is used for this residence.  
2. Coal ownership for the parcels listed in the Surface Owners Legend are all CLC(C).  
3. Leasehold for all the parcels listed in the Surface Owners Legend are all AEC(L).  
4. AEC = American Energy Corporation  
5. CLC = Consolidated Land Company  
6. Ohio South NAD83ft Coordinate System

LOCATION MAP  
Scale 1" = 1 Mile  
Sources: Belmont County Highway Map, 2003  
and Monroe County Highway Map, 2002  
Drainage Basin: Captina Creek &  
Sunfish Creek  
Located Within the Woodsfield  
USGS 7.5 Minute Quadrangle

Surface Owners Legend		
50 K&C Kanzig	98 Erica Cramer	114 Linda & A. Mallett
51 D&J Anderson	99 Sharon Shriver	115 Clara Bartimus
52 James & Connie Hranko	101 Jody Isaly	116 Terry Caldwell
53 Mary Lucas	102 Dan & P. Kuhn	117 Eugene & Grace Saffield
64 L&A Ice	103 C & Beverly Datzuliak	123 Gerald & Nellie Crum
77 C & Beverly Datzuliak	104 D & Vivian Burke	125 Tami Neiswonger
84 Neil & Neida Hamilton	105 Jonetta Shipley	126 Jim & Betty Edgington
89 Carol Warren	106 Robin Stonebreaker	127 Dave Eichorn
92 Walker & B. Dornon	107 Marcela Smith	128 Dustin Dyer
93 Jack & P. Turner	108 Board of Trustees	129 Tom Dick
94 Sharon Shriver	110 Doris Woda	130 Evelyn Brooks
95 Steve Susac	111 Daniel Morris	131 Carol Fisher
96 Steve Susac	112 Bryan Bier	133 Pam Jones
97 Jesse & Connie Stephens	113 Ray A. Baker	140 Village of Beallsville

- LEGEND**
- Zero Subsidence Line
  - Partial Recovery-Zero Subsidence Room and Pillar 37.2 Ac
  - Full Recovery 125.5Ac
  - Contours 20' Intervals
  - Index Contours 100' Intervals
  - Intermittent Stream
  - Perennial Stream
  - Geologic Cross-Section A-A'
  - Existing/Pending Applications
  - Bore Holes
  - 1000' Hydrologic Boundary
  - Application Boundary-162.7 Ac
  - Property Line
  - Private Road
  - Roads
  - Section Lines
  - Township Line
  - Underground Lines
  - Overhead Lines
  - Public Water Lines
  - Beallsville Corp. Limits
  - Public Sewer Lines
  - Attachment 27A
  - Attachment 31
  - Surface Owner Legend #
  - Developed Spring
  - Undeveloped Spring
  - Drilled Well
  - Dug Well
  - Upstream
  - Downstream
  - Water Impoundment
  - Sampling Station
  - Existing Monitoring Station
  - Ruins
  - Pool
  - Church
  - Cemetery
  - Commercial Building
  - Public, Community, Institutional Building
  - Occupied Dwelling
  - Un-occupied Dwelling
  - Corn Crib
  - Silo
  - Surface Owner - As Shown
  - Mineral Owner - As Shown
  - Coal Owner (See Map Notes 2&5)
  - Lessee - (See Map Notes 3&4)

- WELL LEGEND**
- UNKNOWN STATUS
  - PLUGGED GAS WELL
  - PLUGGED OIL WELL
  - OIL WELL
  - DRY HOLE
  - GAS WELL
  - OIL AND GAS WELL
  - DRY HOLE WITH OIL AND GAS SHOW

I, the undersigned, hereby certify that this map is correct, and shows to the best of my knowledge and belief all the information required by Chapter 1513 of the Revised Code and Rules adopted thereunder.

ACKNOWLEDGED BEFORE ME A NOTARY PUBLIC THIS 21<sup>st</sup> DAY OF December 2010.

NOTARY PUBLIC  
DENISE R. JACKSON  
My Commission Expires 09/26/2015

2	JRS	12/21/10
1	JRS	11/30/10
No.	Revision/Draftsman	Date

**American Energy Corporation**  
43821 Mayhugh 183 Road  
Beallsville, Ohio 43104  
Phone: 740.808.9155 Fax: 740.808.9139

**Application and Hydrology Map**  
Situated in Monroe County, Sunbury Township  
Section 9 & 12

Project: D-0425-15  
Date: August 25, 2010 Contour Interval: 20'  
Scale: 1" = 300' Drawn by: JRS



# American Energy Corporation

43521 Mayhugh Hill Road  
Twp. Hwy. 88  
Beallsville, OH 43718  
740-926-9152  
740-926-9138

July 27, 2010

Mr. Brent Heavlin  
Ohio Department of Natural Resources  
Division of Mineral Resources Management  
2050 E. Wheeling Avenue  
Cambridge, OH 43725

RE: D-0425-14 Permit Update to Remove Condition

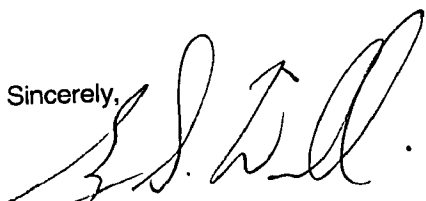
Brent:  
American Energy Corp. is seeking to remove the condition prohibiting Longwall mining within 250' of existing impoundment P-34.11. Since the issuance of D-0425-14 the Land owner has modified P-34.11. The Modification consisted of an Exit channel being cut 6.5' below the previous elevation of the primary spill way. With the land owner's modification P-34.11 is no longer capable of storage over 20 Acer-ft.

Proof of the modification is represented by the attached surveyed As-built Plan & Profiles with the modified Stage Storage Diagram. Additionally you will find pictures of P-34.11 after the Modification. In the pictures will notice the dramatic change in P-34.11's surface area with the 6.5' drop in elevation.

Please find review this and advise as the mine is approaching the area and has about three weeks before it will encroach on that area. We cannot afford to halt the longwall mining unit as it would be extremely costly.

If you have any questions or require additional information, please do not hesitate to contact me at 740/310-2989.

Sincerely,



Greg Williams  
Permitting Engineer

Enclosures

CC: file

AEC 09804



## COAL MINING AND RECLAMATION PERMIT

**Issued To:** AMERICAN ENERGY CORP  
43521 Mayhugh Hill Rd.  
Twp Hwy 88  
Beallsville, OH 43716

**Telephone:** (740) 926-9152

**Permit Number:** D-425  
**Application Number:** D-425-14  
**Acreage:** 0  
**Underground Acreage:** 741.2  
**Effective:** 02/26/2010  
**Expires:** 10/21/2014

**Type of Operation:** Underground (Longwall)

### CONDITIONS

CONDITION TYPE	DESCRIPTION
Archeology	In the event of ground surface damage from mining related actions the applicant will obtain an archaeological clearance from the Division that includes the identification and review of access route(s) to the damage when necessary.
Other	Longwall is prohibited within 250 feet of impoundments P-34:11 and P-34:12. The permittee may submit a permit update letter with an engineer's statement that the impoundments have been modified to less than 20 acre-feet. Upon approval of the permit update letter, the Division will remove this permit condition.

### LOCATION IS NOT AVAILABLE

The issuance of this permit means only that the application to conduct a coal mining operation meets the requirements of Chapter 1513 of the Revised Code, and as such DOES NOT RELIEVE the operator of any obligation to meet other federal, state or local requirements.

This permit is issued in accordance with and subject to the provisions, conditions, and limitations of Chapter 1513 of the Revised Code and Chapters 1501:13-1, 1501:13-3 through 1501:13-14 of the Administrative Code.

The water monitoring plan for this permit shall be:

**Quality:** See Page 26, F3 of the Permit Application

**Quantity:** See Page 26, F3 of the Permit Application

No New Sites

**Note:** These monitoring requirements are separate from NPDES monitoring requirements.

**Signature:**

*John F. Hunter BH*

Chief, Mineral Resources Management

**Date:** 02/26/2010

OPERATOR



Picture Taken on 6-04-10 of P-34.11 a week after Modification



Picture Taken on 7-08-10 of P-34.11



Picture Taken on 7-08-10 of P-34.11 Show the Chanel Modification



Picture Taken on 7-08-10 of P-34.11 Show the Chanel Modification

OHIO DEPARTMENT OF NATURAL RESOURCES  
Division of Mineral Resources Management

## COAL PERMIT UPDATE LETTER

To: Chief, Division of Mineral Resources Management

Date: July 29, 2010

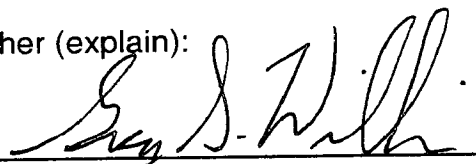
Permittee: American Energy Corp.

Please consider this notification that the following action has occurred on permit D-0425.☐ Delete operator (specify): \_\_\_\_\_

Effective Date: \_\_\_\_\_

☒ Remove permit condition (specify below and attach supporting documentation)  
(i.e., 401/404 approval, NPDES approval, PTI approval, etc.)

AEC is seeking to remove the condition prohibiting Longwall mining within 250' of existing impoundment P-34.11. Proof of the modification is represented by the attached surveyed As-built Plan & Profiles with the modified Stage Storage Diagram and photos.

☐ Ownership & Control information (submit updated Owners and Controllers)☐ Change of address/phone number/contact information of principal place of business  
(specify below)☐ Other (explain):  
Authorized Signature7/29/2010  
Date

## FOR DIVISION USE ONLY

☒ Approved☐ Disapproved

Chief, Division of Mineral Resources Management

AUG 19 2010

Date

ORIGINAL

OPERATOR



## COAL MINING AND RECLAMATION PERMIT

**Issued To:** AMERICAN ENERGY CORP  
43521 Mayhugh Hill Rd.  
Twp Hwy 88  
Beallsville, OH 43716

**Telephone:** (740) 926-9152

**Permit Number:** D-425  
**Application Number:** D-425-14  
**Acreage:** 0  
**Underground Acreage:** 741.2  
**Effective:** 08/19/2010  
**Expires:** 10/21/2014

**Type of Operation:** Underground (Longwall)

### CONDITIONS

CONDITION TYPE	DESCRIPTION
Archeology	In the event of ground surface damage from mining related actions the applicant will obtain an archaeological clearance from the Division that includes the identification and review of access route(s) to the damage when necessary.
Other	Longwall is prohibited within 250 feet of impoundments <del>P-34.11</del> and P-34.12. The permittee may submit a permit update letter with an engineer's statement that the impoundments have been modified to less than 20 acre-feet. Upon approval of the permit update letter, the Division will remove this permit condition. Permit Update Letter R-425-PUL1 issued 08-19-2010 removes the prohibition not to Longwall mine within 250 of impoundment P-34.11 (SMM)

### LOCATION IS NOT AVAILABLE

The issuance of this permit means only that the application to conduct a coal mining operation meets the requirements of Chapter 1513 of the Revised Code, and as such DOES NOT RELIEVE the operator of any obligation to meet other federal, state or local requirements.

This permit is issued in accordance with and subject to the provisions, conditions, and limitations of Chapter 1513 of the Revised Code and Chapters 1501:13-1, 1501:13-3 through 1501:13-14 of the Administrative Code.

The water monitoring plan for this permit shall be:

**Quality:** See Page 26, F3 of the Permit Application

**Quantity:** See Page 26, F3 of the Permit Application

**Note:** These monitoring requirements are separate from NPDES monitoring requirements.

**Signature:**

*John F. Hunter* BH  
Chief, Mineral Resources Management

**Date:** 08/19/2010

OPERATOR

ORIGINAL





## COAL MINING AND RECLAMATION PERMIT

AUG 11 2011

**Issued To:** AMERICAN ENERGY CORP  
43521 Mayhugh Hill Rd.  
Twp Hwy 88  
Beallsville, OH 43716

**Telephone:** (740) 926-9152

**Permit Number:** D-425  
**Application Number:** D-425-14  
**Acreage:** 0  
**Underground Acreage:** 741.2  
**Effective:** 02/26/2010  
**Expires:** 10/21/2014

**Type of Operation:** Underground (Longwall)

### CONDITIONS

CONDITION TYPE	DESCRIPTION
Archeology	In the event of ground surface damage from mining related actions the applicant will obtain an archaeological clearance from the Division that includes the identification and review of access route(s) to the damage when necessary.
Other	Longwall is prohibited within 250 feet of impoundments P-34.11 and P-34.12. The permittee may submit a permit update letter with an engineer's statement that the impoundments have been modified to less than 20 acre-feet. Upon approval of the permit update letter, the Division will remove this permit condition.

### LOCATION IS NOT AVAILABLE

The issuance of this permit means only that the application to conduct a coal mining operation meets the requirements of Chapter 1513 of the Revised Code, and as such DOES NOT RELIEVE the operator of any obligation to meet other federal, state or local requirements.

This permit is issued in accordance with and subject to the provisions, conditions, and limitations of Chapter 1513 of the Revised Code and Chapters 1501:13-1, 1501:13-3 through 1501:13-14 of the Administrative Code.

The water monitoring plan for this permit shall be:

**Quality:** See Page 26, F3 of the Permit Application  
**Quantity:** See Page 26, F3 of the Permit Application

No New Sites

**Note:** These monitoring requirements are separate from NPDES monitoring requirements.

**Signature:**

*John F. Hunter* BH

Chief, Mineral Resources Management

**Date:** 02/26/2010

OPERATOR

OPERATOR



## APPROVED UNDERGROUND COAL MINING PERMIT APPLICATION

### Applicant:

**Name:** AMERICAN ENERGY CORP

**Address:** 43521 Mayhugh Hill Rd.  
Twp Hwy 88  
Beallsville, OH 43716

**Application Number:** D-425-14

**Number of acres in underground workings:** 741.2

**Number of surface acres to be affected:** 0

**The water monitoring plan for this permit shall be:**

**Quality:** See Page 26, F3 of the Permit Application

**Quantity:** See Page 26, F3 of the Permit Application

No new sites

**Note:** These monitoring requirements are separate from NPDES monitoring requirements.

This application is APPROVED since it demonstrates and the Division has found that the criteria in paragraph (E) of rule 1501: 13-5-01 of the Administrative Code have been met.

**Signature:**

*John F. Hunter* BH

**Date:**

2-26-2010

# OHIO DEPARTMENT OF NATURAL RESOURCES DIVISION OF RECLAMATION

Quarterly Monitoring Report Sheet  
(Submit in Quadruplicate)

Permittee: **CENTURY MINE**

Permit Location: **D-425**

Legend

W = Drilled Well (No Log Available)  
WL = Drilled Well (Log Available)  
DW = Dug Well  
DS = Developed Spring

D = Downstream Sampling Station  
U = Upstream Sampling Station  
P = Water Impoundment  
S = Spring (Undeveloped)

X 1st Qtr. 2nd Qtr. 3rd Qtr. 4th Qtr.  
Pre-Mining X Mining Post-Mining  
(X appropriate blank for mine status)

Monitoring Site	Static Water Level	Stream or Spring Discharge (cfs/gpm)	Date Measured	pH, Field Standard Units	pH, Lab <sup>H</sup> Standard Units	Total Acidity mg/l as CaCO <sub>3</sub>	Total Alkalinity mg/l as CaCO <sub>3</sub>	Total Iron mg/l	Total Manganese mg/l	Total Suspended Solids mg/l	Total Hardness mg/l	Total Sulfate mg/l	Specific Conductance @ 25° C µmho/cm

Permittee Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Laboratory Name: TraDet Laboratories Inc.

Analyst's Signature: See Attached Analysis

Date: \_\_\_\_\_

\*Static Water Level of Well Below Land Surface (feet)

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

UNDERGROUND COAL MINING AND RECLAMATION  
PERMIT APPLICATION  
(UNDERGROUND WORKINGS ONLY)

A. Applicant's Name **American Energy Corporation**

Address **43521 Mayhugh Hill Road**

City **Beallsville** State **OH** Zip **43716**

Telephone **(740) 926-9152**

Employer Identification No. (EIN) **31-1550443**, or

Social Security No. (last 4 digits) **XXX-XX-N/A**

RECEIVED

FEB 24 2010

DIVISION OF MINERAL RESOURCES  
CAMBRIDGE

B. Type of Operation (check appropriate space(s)):

☒ Room and Pillar, ☐ Pillar Extraction, ☒ Longwall, ☐ Other

C. Name of mine **Century Mine**

D. List below the MSHA identification numbers for the mine and for all mine-associated structures requiring MSHA approval on this application area.

**33-01070**

E. Indicate the exploration permit number(s) or notice of intent (NOI) number(s) that were obtained for this application area.

**8-CA-017, 8-CA-039,**

F. Did a person other than an employee of the applicant prepare this application?

Yes ☒ No ☐ If "yes," provide:

Preparer's Name **Jack A. Hamilton and Associates, Inc.**

Address **P.O. Box 471, 342 High Street**

City **Flushing** State **OH** Zip **43977** Telephone **(740) 968-4947**

OPERATOR

- G. I, the undersigned, a responsible official of the applicant, do hereby verify the information in the complete permit application as true and correct to the best of my information and belief.

Printed Name James R. Turner, Jr. Title Treasurer

Signature [Signature] Date 2/28/09

Sworn before me and subscribed in my presence this 28 day of Feb., 2009

[Signature]  
Notary Public



DENISE B. DAVIES  
Notary Public, State of Ohio  
My Commission Expires May 28, 2009

H. **FOR REVISION REVIEW ONLY:** This item is to be completed after revisions, if any, have been made to the permit application.

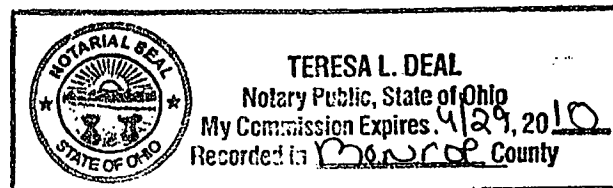
I, the undersigned, a responsible official of the applicant, do hereby verify and acknowledge the revisions made during the permit review process as true and correct to the best of my information and belief.

Printed Name James R. Turner, Jr. Title Treasurer

Signature [Signature] Date 10/31/2009

Sworn before me and subscribed in my presence this 31<sup>st</sup> day of Oct, 2009

[Signature]  
Notary Public





H. **FOR REVISION REVIEW ONLY:** This item is to be completed after revisions, if any, have been made to the permit application.

I, the undersigned, a responsible official of the applicant, do hereby verify and acknowledge the revisions made during the permit review process as true and correct to the best of my information and belief.

Printed Name James R. Turner, Jr.

Title Treasurer

Signature 

Date 2/5/10

Sworn before me and subscribed in my presence this 5<sup>th</sup> day of February 2010.

  
Notary Public



KATHY J. ROE  
Notary Public, State of Ohio  
My Commission Exp. Dec. 14, 2014

H. **FOR REVISION REVIEW ONLY:** This item is to be completed after revisions, if any, have been made to the permit application.

I, the undersigned, a responsible official of the applicant, do hereby verify and acknowledge the revisions made during the permit review process as true and correct to the best of my information and belief.

Printed Name James R. Turner, Jr.

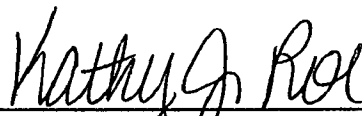
Title Treasurer

Signature 

Date

2/18/10

Sworn before me and subscribed in my presence this 18<sup>th</sup> day of February 2010



Notary Public



KATHY J. ROE  
Notary Public, State of Ohio  
My Commission Exp. Dec. 14, 2014

## **PART 1: LEGAL, FINANCIAL, COMPLIANCE, AND RELATED INFORMATION**

### **A. IDENTIFICATION OF INTERESTS**

- (1) Is the applicant a single proprietorship? Yes ☐ No ☒ If "yes," provide the following:

Owner's Name **...**

Address **...**

City **...** State **...** Zip **...** Telephone **...**

EIN **...**, or SSN (last 4 digits) XXX-XX-**...**

Beginning date of ownership **...**

If "no," indicate business structure of applicant.

- ☐ Partnership (registration no. and date obtained) **...**  
☒ Corporation (charter no. and date incorporated) **00842695 4-12-1993**  
☐ Association  
☐ Other, specify **...**

Provide the following for the applicant's statutory agent and submit Owners and Controllers

Agent's Name **A & H Statutory Service Corp.**

Address **925 Euclid Avenue, Suite 1100**

City **Cleveland** State **OH** Zip **44115** Telephone **(216) 696-7631**

EIN **34-104130**, or SSN (last 4 digits) XXX-XX-**N/A**

- (2) Will there be a mine operator other than the applicant?

Yes ☐ No ☒ If "yes" provide the operator's name and submit Operator Ownership and Control (Note: if more than one operator, indicate operator's name and submit a separate form for each).

Operator's Name **...**

- (3) Provide the following for the person or entity who will pay the abandoned mine land reclamation fee for the applicant.

Name **American Energy Corporation**

Address **43521 Mayhugh Hill Road**

City **Beallsville** State **OH** Zip **43716** Telephone **(740) 926-9152**

EIN **31-1550443**, or SSN (last 4 digits - optional) XXX-XX-**...**

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **American Energy Corporation**

Name **Robert E. Murray**

Street address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

EIN **31-1956752**, or SSN (last 4 digits) **xxx-xx-8852**

Title of position within entity **President**

Date position assumed/ended (if applicable) **12/15/04 / N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Murray Energy Corporation**

Street address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

EIN **31-1956752**, or SSN (last 4 digits) **xxx-xx-8852**

Title of position within entity **Sole Shareholder**

Date position assumed/ended (if applicable) **2/23/01 /**

Percent of ownership **100%** Date of ownership **2/23/01**

Name **Michael O. McKown**

Street address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

EIN **31-1956752**, or SSN (last 4 digits) **xxx-xx-4552**

Title of position within entity **Secretary**

Date position assumed/ended (if applicable) **11-1-99 /**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

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Name of business entity **American Energy Corporation**

Name **James R. Turner**

Street address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

EIN , or SSN (last 4 digits) **xxx-xx-8372**

Title of position within entity **Treasurer**

Date position assumed/ended (if applicable) **03-01-05/**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert Putsock**

Street address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

EIN , or SSN (last 4 digits) **xxx-xx-8460**

Title of position within entity **Assistant Treasurer**

Date position assumed/ended (if applicable) **1-27-04/**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert E Murray**

Street address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

EIN , or SSN (last 4 digits) **xxx-xx-8852**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **12/15/04/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

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Name of business entity **Murray Energy Corporation**

Name **Murray Energy Holdings Co.**

Street address **29325 Chagrin Boulevard, suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **20-0100463**, or SSN (last 4 digits) xxx-xx-

Title of position within entity **Shareholder**

Date position assumed/ended (if applicable) **N/A/N/A**

Percent of ownership **100** Date of ownership **10/21/03**

Name **Robert E. Murray**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**8852**

Title of position within entity **Chairman of the Board**

Date position assumed/ended (if applicable) **02/23/01/N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert E. Murray**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) xxx-xx-**8852**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **2/23/01/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

Part 1: Section A



OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

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Name of business entity **Murray Energy Corporation**

Name **Richard L. Lawson**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **34-1956752**, or SSN (last 4 digits) xxx-xx-**N/A**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **01/28/05/N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert E Murray**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **34-1956752**, or SSN (last 4 digits) xxx-xx-**8852**

Title of position within entity **Chief Executive Officer**

Date position assumed/ended (if applicable) **2/23/01/N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Henry W. Fayne**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **34-1956752**, or SSN (last 4 digits) xxx-xx-**7216**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **01/28/05/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

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Name of business entity **Murray Energy Corporation**

Name **Robert D. Moore**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **21-1111111**, or SSN (last 4 digits) **xxx-xx-9703**

Title of position within entity **Vice President**

Date position assumed/ended (if applicable) **12/17/04/8/01/08**

Percent of ownership **0** Date of ownership **N/A**

Name **P. Bruce Hill**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **21-1111111**, or SSN (last 4 digits) **xxx-xx-6916**

Title of position within entity **Vice President**

Date position assumed/ended (if applicable) **12/18/03/11/05/09**

Percent of ownership **0** Date of ownership **N/A**

Name **Michael O. McKown**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN **21-1111111**, or SSN (last 4 digits) **xxx-xx-4552**

Title of position within entity **Secretary**

Date position assumed/ended (if applicable) **02/23/01/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **Murray Energy Corporation**

Name **Robert D. Moore**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **21-1111111**, or SSN (last 4 digits) **xxx-xx-9703**

Title of position within entity **Executive Vice President**

Date position assumed/ended (if applicable) **8/01/08 /N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert D. Moore**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **21-1111111**, or SSN (last 4 digits) **xxx-xx-9703**

Title of position within entity **Chief Financial Officer**

Date position assumed/ended (if applicable) **9/11/07/NA**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert D. Moore**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN **21-1111111**, or SSN (last 4 digits) **xxx-xx-9703**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **4/23/07/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

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Name of business entity **Murray Energy Corporation**

Name **John R Forrelli**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **33-08852**, or SSN (last 4 digits) **xxx-xx-2688**

Title of position within entity **Vice President**

Date position assumed/ended (if applicable) **9/11/07 /N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert E Murray**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **33-08852**, or SSN (last 4 digits) **xxx-xx-8852**

Title of position within entity **Shareholder**

Date position assumed/ended (if applicable) **02/23/01/10/21/03**

Percent of ownership **100** Date of ownership **2/23/01-10/21/03**

Name **Robert E Murray**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN **33-08852**, or SSN (last 4 digits) **xxx-xx-8852**

Title of position within entity **President**

Date position assumed/ended (if applicable) **02/23/01/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **Murray Energy Corporation**

Name **Michael D Loiacono**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **21-1444444**, or SSN (last 4 digits) **xxx-xx-6784**

Title of position within entity **Chief Financial Officer**

Date position assumed/ended (if applicable) **12/20/05 /4/23/07**

Percent of ownership **0** Date of ownership **N/A**

Name **Michael D Loiacono**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **21-1444444**, or SSN (last 4 digits) **xxx-xx-6784**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **1/28/05/4/23/07**

Percent of ownership **0** Date of ownership **N/A**

Name **Michael D Loiacono**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN **21-1444444**, or SSN (last 4 digits) **xxx-xx-6784**

Title of position within entity **Treasurer**

Date position assumed/ended (if applicable) **02/23/01/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **Murray Energy Corporation**

Name **John R Forrelli**

Street address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN , or SSN (last 4 digits) **xxx-xx-2688**

Title of position within entity **Vice President**

Date position assumed/ended (if applicable) **12/18/03 /12/17/04**

Percent of ownership **0** Date of ownership **N/A**

Name

Street address

City State Zip

EIN , or SSN (last 4 digits) xxx-xx-

Title of position within entity

Date position assumed/ended (if applicable) /

Percent of ownership Date of ownership

Name

Street address

City State Zip

EIN , or SSN (last 4 digits) xxx-xx-

Title of position within entity

Date position assumed/ended (if applicable) /

Percent of ownership Date of ownership

Submit and identify additional pages necessary to complete response.

Part 1: Section A



OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **Murray Energy Holdings Company**

Name **Robert D. Moore**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **17-0404**, or SSN (last 4 digits) **xxx-xx-9703**

Title of position within entity **President**

Date position assumed/ended (if applicable) **04/23/07/N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert E. Murray**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **17-0404**, or SSN (last 4 digits) **xxx-xx-8852**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **06/30/03/N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Michael D. Loiacono**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **17-0404**, or SSN (last 4 digits) **xxx-xx-6784**

Title of position within entity **Treasurer**

Date position assumed/ended (if applicable) **1/10/05/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **Murray Energy Holdings Company**

Name **Michael McKown**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **XXXX**, or SSN (last 4 digits) **xxx-xx-4552**

Title of position within entity **Secretary**

Date position assumed/ended (if applicable) **06/30/03/ N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert Edward Murray**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **XXXX**, or SSN (last 4 digits) **xxx-xx-1320**

Title of position within entity **Shareholder**

Date position assumed/ended (if applicable) **06/30/03/N/A**

Percent of ownership **20** Date of ownership **06/30/03**

Name **Ryan Michael Murray**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **Oh** Zip **44122**

EIN **XXXX**, or SSN (last 4 digits) **xxx-xx-0815**

Title of position within entity **Shareholder**

Date position assumed/ended (if applicable) **06/30/03/N/A**

Percent of ownership **20** Date of ownership **06/30/03**

Submit and identify additional pages necessary to complete response.

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **Murray Energy Holdings Company**

Name **Jonathan Robert Murray**

Street address **29325 Chargrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN **21-1111**, or SSN **0811**

Title of position within entity **Shareholder**

Date position assumed/ended (if applicable) **06/30/03/ N/A**

Percent of ownership **20** Date of ownership **06/30/03**

Name **Robert E Murray**

Street address **29325 Chargrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN **21-1111**, or SSN **8852**

Title of position within entity **Shareholder**

Date position assumed/ended (if applicable) **6/30/03/ N/A**

Percent of ownership **20** Date of ownership **06/30/03**

Name **Robert D Moore**

Street address **29325 Chargrin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN **21-1111**, or SSN **9703**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **4/23/07/N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **Murray Energy Holdings Company**

Name **Michael O. McKown**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN **29-111**, or SSN **4552**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **06/30/03/ N/A**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert E. Murray**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN **29-111**, or SSN **8852**

Title of position within entity **Chairman of the Board**

Date position assumed/ended (if applicable) **6/30/03/ 11/29/05**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert D. Moore**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN **29-111**, or SSN **9703**

Title of position within entity **Chief Executive Officer**

Date position assumed/ended (if applicable) **4/23/07/ N/A**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **Murray Energy Holdings Company**

Name **Robert E. Murray**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN **20-0100463**, or SSN **8852**

Title of position within entity **President**

Date position assumed/ended (if applicable) **06/30/03/ 11/29/05**

Percent of ownership **0** Date of ownership **N/A**

Name **Robert E. Murray**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN **20-0100463**, or SSN **8852**

Title of position within entity **Chief Executive Officer**

Date position assumed/ended (if applicable) **6/30/03/ 11/29/05**

Percent of ownership **0** Date of ownership **N/A**

Name **Scott A. Boyle**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN **20-0100463**, or SSN **Decline**

Title of position within entity **Chief Executive Officer**

Date position assumed/ended (if applicable) **11/29/05/12/20/05**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **Murray Energy Holdings Company**

Name **Michael D. Loiacono**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN **6784**

Title of position within entity **President**

Date position assumed/ended (if applicable) **1/10/05/ 4/23/07**

Percent of ownership **0** Date of ownership **N/A**

Name **Michael D. Loiacono**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN , or SSN **6784**

Title of position within entity **Chief Executive Officer**

Date position assumed/ended (if applicable) **1/10/05/ 4/23/07**

Percent of ownership **0** Date of ownership **N/A**

Name **Scott A. Boyle**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN **20-0100463**, or SSN **Decline**

Title of position within entity **President**

Date position assumed/ended (if applicable) **11/29/05/12/20/05**

Percent of ownership **0** Date of ownership **N/A**

Submit and identify additional pages necessary to complete response.

Part 1: Section A



OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OWNERS AND CONTROLLERS

Applicant's Name **American Energy Corporation**

This attachment is to be completed and submitted with the permit application if the applicant is other than a single proprietorship. Provide the following for all partners, officers, directors, and stockholders owning ten percent or more of any class of voting stock or other instruments of ownership, and any other person performing a function similar to a director. Persons holding or who have held multiple positions must be listed separately for each position. If any owner or controller listed is a business entity and not an individual, also complete an Owners and Controllers for that business entity.

Name of business entity **Murray Energy Holdings Company**

Name **Michael D. Loiacono**

Street address **29325 Chargin Boulevard, Suite 300**

City **Pepper Pike** State **OH** Zip **44122**

EIN **29-100463**, or SSN **6784**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **6/30/03/ 4/23/07**

Percent of ownership **0** Date of ownership **N/A**

Name **Fifth Third Bank Of Northeast Ohio Trustee, (Murray 2003 Trust)**

Street address **24261 Cedar Rd.**

City **Cleveland** State **OH** Zip **44124**

EIN **20-0100463**, or SSN **N/A**

Title of position within entity **Shareholder**

Date position assumed/ended (if applicable) **N/A/**

Percent of ownership **20** Date of ownership **10/13/2003**

Name **Fifth Third**

Street address **1000**

City **Cincinnati** State **OH** Zip **45202**

EIN **29-100463**, or SSN **6784**

Title of position within entity **Director**

Date position assumed/ended (if applicable) **7/15/03/4/23/07**

Percent of ownership **2.5%** Date of ownership **4/23/07**

Submit and identify additional pages necessary to complete response.

Part 1: Section A

- (4) Provide the following for all persons having the authority or ability to commit the financial, real property assets, or working resources of the applicant who are not otherwise identified as officers, directors or owners of the applicant. If none, check box: ☒. If any person listed is a business entity and not an individual, also complete Owners and Controllers for that person.

Name                     

Address                     

City                      State                      Zip                      Telephone                     

EIN                     , or SSN (last 4 digits) XXX-XX-                    

O & C relationship to entity                     

Date O & C relationship began/ended (if applicable)                      /                     

If necessary, submit additional pages to complete response.

- (5) Provide the following for all persons owning or controlling the coal to be mined by another person under a lease, sublease, or other contract and (a) having the right to receive the coal after mining, or (b) having the authority to determine the manner in which another person conducts coal mining operations. If none, check box: ☒. If any person listed is a business entity and not an individual, also complete Owners and Controllers for that person.

Name                     

Address                     

City                      State                      Zip                      Telephone                     

EIN                     , or SSN (last 4 digits) XXX-XX-                    

O & C relationship to entity                     

Date O & C relationship began/ended (if applicable)                      /                     

If necessary, submit additional pages to complete response.

- (6) List below the person or persons primarily responsible for ensuring that the applicant will comply with Chapter 1513 of the Revised Code and the rules adopted pursuant thereto while mining and reclaiming the area for which this permit is requested.

James R. Turner, Jr.

- (7) Has the applicant, any person or entity listed under items A (4) and (5), or any person or entity listed on the Owners and Controllers who "owned or controlled" or "owns or controls" held a coal mining permit in the United States within the five years preceding the date of this application?

Yes ☒ No ☐

If "yes," submit Permit List.

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PERMIT LIST

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **American Energy Corporation**  
Address **43521 Mayhugh Hill Road Twp. Highway 88**  
City **Beallsville** State **OH** Zip **43716**  
Telephone **740-926-9152**  
EIN **31-1550443** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>D-0425</b>	<b>OH</b>	<b>DMRM</b>	<b>33-01070 / 10-22-84</b>
<b>D-1159</b>	<b>OH</b>	<b>DMRM</b>	<b>33-02122 / 01-26-98</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray, shareholder 100%**

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PERMIT LIST

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **Andalex Resources Management, Inc.**  
Address **P.O. Box 902, 6750 N. Airport Rd.**  
City **Price** State **UT** Zip **84501**  
Telephone **435-637-5385**  
EIN **61-0731325** or SSN **77-28**

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>C/007/019</b>	<b>UT</b>	<b>DOGM</b>	<b>42-01474 / 7-1-78</b> <b>42-02028 / 4-1-89</b>
<b>C/007/033</b>	<b>UT</b>	<b>DOGM</b>	<b>42-01864 / 2-1-84</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Murray Energy Holdings Company - 100% Shareholder**

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PERMIT LIST

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **Belmont Coal, Inc.**  
Address **P.O. Box 146**  
City **Powhatan Point** State **OH** Zip **43942**  
Telephone **740-795-5200**  
EIN **31-1536602** or SSN **743**

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>D-0241</b>	<b>OH</b>	<b>DMRM</b>	<b>33-03048 / 7-02-93</b>
<b>D-1020</b>	<b>OH</b>	<b>DMRM</b>	<b>33-04397 / 7-31-97</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray, shareholder 100%**

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PERMIT LIST

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **Energy Resources, Inc.**

Address **PO Box 259**

City **Brockway State PA** Zip **15824**

Telephone **814-265-8021**

EIN **31-1044044** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>24030102</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695 / 05-25-88</b>
<b>33901602</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695 / 05-25-88</b>
<b>17930120</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695 / 05-25-88</b>
<b>24880101</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695 / 05-25-88</b>
<b>24880103</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695 / 05-25-88</b>
<b>24890101</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695 / 05-25-88</b>
<b>24890102</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695 / 05-25-88</b>
<b>24990101</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695 / 05-25-88</b>
<b>24970101</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695 / 05-25-88</b>
<b>24980101</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695 / 05-25-88</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

Part 1: Section A



**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **Energy Resources, Inc.**

Address **PO Box 259**

City **Brockway** State **PA** Zip **15824**

Telephone **814-265-8021**

EIN **31-1044044** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>24010101</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695 / 05-25-88</b>
<b>24900104</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695 / 05-25-88</b>
<b>24900103</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695 / 05-25-88</b>
<b>24960101</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695 / 05-25-88</b>
<b>24970102</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695 / 05-25-88</b>
<b>24970103</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695 / 05-25-88</b>
<b>17823701</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695 / 05-25-88</b>
<b>17841607</b>	<b>PA</b>	<b>DEP</b>	<b>36-02695/05-25-88</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Part 1: Section A**

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PERMIT LIST

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **KenAmerican Resources Inc**  
Address **101 Prosperous Place, Suite 125**  
City **Lexington State KY** Zip **40509**  
Telephone **859-543-9220**  
EIN **61-1264385** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>8895009</b>	<b>KY</b>	<b>DSMRE</b>	<b>1517741 / 10-17-94</b> <b>1517606 / 10-17-94</b>
<b>8895011</b>	<b>KY</b>	<b>DSMRE</b>	<b>1518495 / 10-16-00</b>
<b>8899004</b>	<b>KY</b>	<b>DSMRE</b>	<b>112234 / 7-16-04</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PERMIT LIST

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **Maple Creek Mining, Inc**  
Address **981 Route 917**  
City **Bentleyville** State **PA** Zip **15314**  
Telephone **724-258-2056**  
EIN **25-1755305** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>63723707</b>	<b>PA</b>	<b>DEP</b>	<b>36-00970 / 6-30-95</b>
<b>63733706</b>	<b>PA</b>	<b>DEP</b>	<b>36-00970 / 6-30-95</b>
<b>63841302</b>	<b>PA</b>	<b>DEP</b>	<b>36-00970 / 6-30-95</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert Murray - 100% Shareholder**

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PERMIT LIST

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **Mon-Valley Transportation Center Inc.**  
Address **1 Industrial Park Drive**  
City **Wheeling** State **WV** Zip **26003**  
Telephone **304-232-2860**  
EIN **25-1490495** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>02851602</b>	<b>PA</b>	<b>DEP</b>	<b>36-08678 / 6-8-95</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PERMIT LIST

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **OhioAmerican Energy, Inc.**

Address **34 Kelley Way**

City **Brilliant State Ohio** Zip **43913**

Telephone **740-598-4325**

EIN **20-3044610** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>D-2180</b>	<b>OH</b>	<b>DMRM</b>	<b>33-04387 / 10-9-03</b>
<b>D-2291</b>	<b>OH</b>	<b>DMRM</b>	<b>33-04569 / 3-12-07</b>
<b>D-2304</b>	<b>OH</b>	<b>DMRM</b>	<b>33-04550 / 10-26-07</b>
<b>D-2312</b>	<b>OH</b>	<b>DMRM</b>	<b>33-04550 / 2-26-08</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

Part 1: Section A

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

**Applicant's Name American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

**Name of Business Entity PennAmerican Coal, Inc**  
**Address RD 1 P.O. Box 119a**  
**City Avonmore State PA Zip 15619**  
**Telephone 724-697-1348**  
**EIN 25-1800870 or SSN**

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
32951301	PA	DEP	36-08525

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray, Shareholder 100%**

**Part 1: Section A**



**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

**Applicant's Name American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

**Name of Business Entity The American Coal Company**  
**Address 29325 Chagrin Blvd**  
**City Pepper Pike State OH Zip 44122**  
**Telephone 216-765-1240**  
**EIN 73-1546124 or SSN**

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
02	IL	OFFICE OF MINES AND MINERALS	11-02752 / 10-14-98
255	IL	OFFICE OF MINES AND MINERALS	11-02752 / 10-14-98
257	IL	OFFICE OF MINES AND MINERALS	11-02752 / 10-14-98
306	IL	OFFICE OF MINES AND MINERALS	11-02752 / 10-14-98
352	IL	OFFICE OF MINES AND MINERALS	11-02752 / 10-14-98
1410	IL	OFFICE OF MINES AND MINERALS	11-02752 / 10-14-98

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Murray Energy Holdings, Inc - 100% Shareholder**

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

**Applicant's Name American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

**Name of Business Entity TDK Coal Sales, Inc.  
Address PO Box 259 RD 2 Fermantown Road  
City Brockway State PA Zip 15824  
Telephone 814-865-8021  
EIN 25-1422374 or SSN**

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
17814000	PA	DEP	36-08867 / 3-1-84
17840126	PA	DEP	36-08867 / 11-22-85
17900108	PA	DEP	36-08867 / 5-21-90
16900109	PA	DEP	36-07707 / 10-2-90
10900109	PA	DEP	36-07707 / 9-16-91
17900143	PA	DEP	36-08867 / 2-13-92
16910104	PA	DEP	36-07707 / 5-11-92
17910124	PA	DEP	36-08867 / 9-9-92
10930105	PA	DEP	36-07707 / 12-27-93
03940101	PA	DEP	36-07707 / 6-6-95

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Part 1: Section A**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

**Applicant's Name American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

**Name of Business Entity TDK Coal Sales, Inc.**  
**Address P.O. Box 259 RD 2 Fermantown Road**  
**City Brockway State PA Zip 15824**  
**Telephone 814-865-8021**  
**EIN 25-1422374 or SSN**

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
03950106	PA	DEP	36-07707 / 11-9-95
03950701	PA	DEP	36-00813 / 6-5-96 36-05708 / 9-2-99
03960103	PA	DEP	36-07707 / 1-14-97
17960119	PA	DEP	36-08867 / 2-25-97
33960109	PA	DEP	36-07707 / 3-3-98
16980102	PA	DEP	36-07707 / 9-10-98
24970104	PA	DEP	36-08867 / 9-10-98

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Part 1: Section A**

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PERMIT LIST

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **The Oklahoma Coal Company**

Address **29325 Chagrin Blvd**

City **Pepper Pike** State **OH** Zip **44122**

Telephone **216-765-1240**

EIN **34-1673480** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>D-0230</b>	<b>OH</b>	<b>DMRM</b>	<b>N/A</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Robert E. Murray, shareholder 100%**

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PERMIT LIST

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **The Ohio Valley Coal Company**

Address **56854 Pleasant Ridge Road**

City **Alledonia** State **OH** Zip **43902**

Telephone **740-926-1351**

EIN **34-1041610** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>D-0360</b>	<b>OH</b>	<b>DMRM</b>	<b>33-01159 / 5-27-88</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

Part 1: Section A

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PERMIT LIST**

**Applicant's Name American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

**Name of Business Entity UMCO Energy Inc.**  
**Address 981 Route 917**  
**City Bentleyville State PA Zip 15314**  
**Telephone 724-258-2056**  
**EIN 52-1615668 or SSN**

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
63921301	PA	DEP	36-08375 / 6-8-94

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

**Murray Energy Holdings, Inc. - 100% Shareholder**

**Part 1: Section A**

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PERMIT LIST

Applicant's Name **American Energy Corporation**

Submit the following information for each coal mining operation owned or controlled by either the applicant or by any person who owns or controls the applicant.

Name of Business Entity **Utah American Energy, Inc.**  
Address **375 South Carbon Ave., Suite 127**  
City **Price** State **Utah** Zip **84501**  
Telephone **435-888-4000**  
EIN **34-1874726** or SSN

Permit Number	State	Regulatory Authority	MSHA Number and Date Issued
<b>ACT/015/032</b>	<b>UT</b>	<b>DOGM</b>	<b>42-01715 / 11-22-83</b>
<b>ACT/007/013</b>	<b>UT</b>	<b>DOGM</b>	<b>42-00100 / 12-10-84</b>
<b>ACT/007/019</b>	<b>UT</b>	<b>DOGM</b>	<b>42-02028 / 4-1-89</b>
<b>ACT/007/013</b>	<b>UT</b>	<b>DOGM</b>	<b>42-02241 / 2-24-99</b>
<b>ACT/007/041</b>	<b>UT</b>	<b>DOGM</b>	<b>42-02233 / 3-1-99</b>

If not previously provided, indicate the ownership or control relationship of the business entity with the applicant, including percent of ownership and location in organizational structure:

Part 1: Section A



- (8) Does the applicant, any person or entity listed under items A (4) and (5), or any person or entity listed on Owners and Controllers have a pending coal mining application in any state of the United States?

Yes ☒ No ☐ If "yes," submit Pending Application List.

- (9) Submit Certificate of Insurance.

**B. COMPLIANCE INFORMATION**

- (1) Has the applicant, any subsidiary, affiliate or persons controlled by or under common control with the applicant:

- (a) Had a federal or state coal mining permit suspended or revoked in the five years preceding the date of submission of this application?

Yes ☐ No ☒ If "yes," submit Suspension, Revocation & Forfeiture List.

- (b) Forfeited a mining bond or similar security deposited in lieu of bond?

Yes ☐ No ☒ If "yes," submit Suspension, Revocation & Forfeiture List.

- (2) Has the applicant been issued notices of violation (NOVs) in connection with any coal mining and reclamation operation during the three years preceding the date of submission of this application for violations of Chapter 1513 of the Revised Code or the Administrative Code, or of any federal or state law, rule, or regulation pertaining to air or water environmental protection?

Yes ☒ No ☐ If "yes," submit NOV List.

- (3) Have any unabated federal or state cessation orders (COs) and unabated air and water quality notices of violations (NOVs) been received prior to the submission date of this application by any coal mining and reclamation operation owned or controlled by either the applicant or by any person who owns or controls the applicant?

Yes ☐ No ☒ If "yes," submit Unabated Violations.

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PENDING APPLICATION LIST**

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**American Energy Corporation**

Application No.	Name of Regulatory Authority	State
<b>D-0425-8</b>	<b>DMRM</b>	<b>OH</b>
<b>D-0425-11</b>	<b>DMRM</b>	<b>OH</b>
<b>D-0425-12</b>	<b>DMRM</b>	<b>OH</b>

**Part 1: Section A**

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PENDING APPLICATION LIST

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**Andalex Resources Inc.**

Application No.	Name of Regulatory Authority	State
<b>PR0025002</b>	<b>DOGM</b>	<b>UTAH</b>

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PENDING APPLICATION LIST

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**Belmont Coal, Inc.**

Application No.	Name of Regulatory Authority	State
<b>10168</b>	<b>DMRM</b>	<b>OH</b>

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PENDING APPLICATION LIST

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**Energy Resources, Inc.**

Application No.	Name of Regulatory Authority	State
<b>17841607</b>	<b>DEP</b>	<b>PA</b>
<b>17823701</b>	<b>DEP</b>	<b>PA</b>

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PENDING APPLICATION LIST

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**KENAMERICAN COAL COMPANY**

Application No.	Name of Regulatory Authority	State
<b>889-5009 R-8</b>	<b>DSMRE</b>	<b>KY</b>
<b>889-9004</b>	<b>DSMRE</b>	<b>KY</b>

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PENDING APPLICATION LIST

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**OHIOAMERICAN ENERGY, INCORPORATED**

Application No.	Name of Regulatory Authority	State
<b>D-2304-1</b>	<b>DMRM</b>	<b>OH</b>
<b>D-2180-1</b>	<b>DMRM</b>	<b>OH</b>

Part 1: Section A



OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PENDING APPLICATION LIST

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**TDK Coal Sales, Inc.**

Application No.	Name of Regulatory Authority	State
<b>17814607</b>	<b>DEP</b>	<b>PA</b>
<b>17823701</b>	<b>DEP</b>	<b>PA</b>

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PENDING APPLICATION LIST

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**THE OHIO VALLEY COAL COMPANY**

Application No.	Name of Regulatory Authority	State
<b>D-0360-14</b>	<b>DMRM</b>	<b>OHIO</b>
<b>D-0360-15</b>	<b>DMRM</b>	<b>OHIO</b>
<b>D-0360-18</b>	<b>DMRM</b>	<b>OHIO</b>
<b>D-0360-19</b>	<b>DMRM</b>	<b>OHIO</b>
<b>D-0360-20</b>	<b>DMRM</b>	<b>OHIO</b>

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

PENDING APPLICATION LIST

Applicant's Name **American Energy Corporation**

Provide the following information for each pending coal mining application for either the applicant or any person who owns or controls the applicant.

Indicate the business entity for which this listing has been completed  
**UMCO Energy, Inc. - High Quality Mine**

Application No.	Name of Regulatory Authority	State
<b>63921301</b>	<b>PA DEP</b>	<b>PA</b>

Part 1: Section A

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

CERTIFICATE OF INSURANCE

Name of Insured **American Energy Corporation**

This is to certify that the policy of insurance listed below has been issued to the above named insured and is in force at this time. The policy provides bodily injury and property damage insurance for all coal mining and reclamation operations of the insured in the state of Ohio as required by 1501:13-7-07 of the Administrative Code stated below.

Name of Insurer **Federal Insurance Company**

Policy Number **37104410**

Policy Period **6/1/09-6/1/2010**

Name of Underwriting Agent **Reschini Agency, Inc.**

Address of Underwriting Agent **922 Philadelphia ST.  
Indiana, PA 15701**

Telephone No. of Underwriting Agent **800 828 5040**

In the event of cancellation or non-renewal of this policy, including non-payment of policy premiums, the insurer agrees to promptly notify: The Division of Mineral Resources Management, 2045 Morse Road, Building H-3, Columbus, Ohio 43229-6693.

6/26/09  
Date

K. Williams  
Signature of Underwriting Agent

This certificate is issued as a matter of information only and confers no rights upon the Division of Mineral Resources Management. This certificate does not amend, extend or alter the coverage afforded by the policy listed above.

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1501:13-7-07(B) THE PUBLIC LIABILITY INSURANCE POLICY SHALL:

- (1) BE IN EFFECT DURING THE TERM OF THE PERMIT OR ANY RENEWAL, INCLUDING THE LENGTH OF ALL RECLAMATION OPERATIONS;
- (2) PROVIDE FOR PERSONAL INJURY AND PROPERTY DAMAGE PROTECTION IN AMOUNTS ADEQUATE TO COMPENSATE ANY PERSONS INJURED OR PROPERTY DAMAGED AS A RESULT OF COAL MINING AND RECLAMATION OPERATIONS, INCLUDING THE USE OF EXPLOSIVES. THE MINIMUM INSURANCE COVERAGE FOR BODILY INJURY AND PROPERTY DAMAGE SHALL BE THREE HUNDRED THOUSAND DOLLARS FOR EACH OCCURRENCE AND FIVE HUNDRED THOUSAND DOLLARS IN THE AGGREGATE; AND
- (3) INCLUDE A RIDER REQUIRING THAT THE INSURER NOTIFY THE CHIEF WHENEVER SUBSTANTIVE CHANGES ARE MADE IN THE POLICY, INCLUDING ANY TERMINATION OR FAILURE TO RENEW.

Part 1: Section A

# NOV LIST

**American Energy Corporation**

[illegible]

## C. RIGHT OF ENTRY INFORMATION

- (1) Provide the following information for every legal or equitable owner of record of the property affected by operations within the underground (UG) workings area, indicating whether the ownership is of surface, coal or non-coal mineral.

LAND OWNER INFORMATION	OWNERSHIP INFORMATION	COUNTY	TOWNSHIP	SECTION	LOT	DEED PARCEL NO.	T-	R-
OWNER NAME: <u>Donald J. Riser</u> ADDRESS: <u>53600 Crum Road</u> CITY, STATE, ZIP: <u>Beallsville, Ohio 43719</u> TELEPHONE: <u>740-926-1122</u>	<input checked="" type="checkbox"/> Surface – UG workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	<u>Belmont</u>	<u>Wayne</u>	<u>7</u>		<u>2-5-37</u>	<u>6</u>	<u>5</u>
OWNER NAME: <u>Raven Rocks Inc.</u> ADDRESS: <u>54061 Crum Road</u> CITY, STATE, ZIP: <u>Beallsville, Ohio 43716</u> TELEPHONE: <u>Unlisted</u>	<input checked="" type="checkbox"/> Surface – UG workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	<u>Belmont</u>	<u>Wayne</u>	<u>7</u>		<u>2-5-29</u> <u>2-5-30</u>	<u>6</u>	<u>5</u>
OWNER NAME: <u>Roger &amp; Edwina Hickman</u> ADDRESS: <u>53659 New Castle Road</u> CITY, STATE, ZIP: <u>Beallsville, Ohio 43716</u> TELEPHONE: <u>740-926-1147</u>	<input checked="" type="checkbox"/> Surface – UG workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	<u>Belmont</u>	<u>Wayne</u>	<u>7</u>		<u>2-5-35</u> <u>2-5-41</u>	<u>6</u>	<u>5</u>
OWNER NAME: <u>Robert &amp; Kathleen Reed</u> ADDRESS: <u>98 - 5<sup>th</sup> Street</u> CITY, STATE, ZIP: <u>Bridgeport, Ohio 43912</u> TELEPHONE: <u>Unlisted</u>	<input checked="" type="checkbox"/> Surface – UG workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	<u>Belmont</u>	<u>Wayne</u>	<u>7</u>		<u>2-5-40</u> <u>2-5-37</u>	<u>6</u>	<u>5</u>

# C. RIGHT OF ENTRY INFORMATION

LAND OWNER INFORMATION	OWNERSHIP INFORMATION	COUNTY	TOWNSHIP	SECTION	LOT	DEED PARCEL NO.	T-	R-
OWNER NAME: Dwight & Penny Lucas ADDRESS: 52879 Crum Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1158	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Belmont  Monroe	Wayne  Sunsbury	7  12		2-63-1, 2-63-14, 2-5-27  2-3-20	6  5	5  5
OWNER NAME: James & Elizabeth Marling ADDRESS: 53219 Crum Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1137	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Belmont	Wayne	7		2-5-28, 2-5-25	6	5
OWNER NAME: William & Amy Doughty ADDRESS: 53078 Belmont Ridge Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1450	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Belmont	Wayne	1, 7		2-13-121, 2-63-1	6	5
OWNER NAME: Timothy & Charity Holland ADDRESS: 53000 Belmont Ridge Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: Unlisted	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Belmont	Wayne	1		2-13-121	6	5



# C. RIGHT OF ENTRY INFORMATION

LAND OWNER INFORMATION	OWNERSHIP INFORMATION	COUNTY	TOWNSHIP	SECTION	LOT	DEED PARCEL NO.	T-	R-
OWNER NAME: Patricia Crum ADDRESS: 53180 Belmont Ridge Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1146	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Belmont	Wayne	1		2-13-160	6	5
OWNER NAME: Randy & Connie Loudon ADDRESS: 53272 Belmont Ridge Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1809	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Belmont	Wayne	1		2-13-160	6	5
OWNER NAME: Rick & Traci Jarrett ADDRESS: 43220 Crabapple Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1015	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Belmont	Wayne	1		2-13-160	6	5
OWNER NAME: Stanley & Wanda Jarrett ADDRESS: 53047 Belmont Ridge Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1187	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Belmont Monroe	Wayne Sunsbury	1 6		2-13-121 2-1-1, 2-2-1	6 5	5 5

# C. RIGHT OF ENTRY INFORMATION

LAND OWNER INFORMATION	OWNERSHIP INFORMATION	COUNTY	TOWNSHIP	SECTION	LOT	DEED PARCEL NO.	T-	R-
OWNER NAME: Helen & Robert Brooks ADDRESS: 43320 Crabapple Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: Unlisted	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Belmont	Wayne	1		2-13-160	6	5
OWNER NAME: Nina Lucas ADDRESS: 46519 E. Captina Hwy Road CITY, STATE, ZIP: Alledonia, OH 43902 TELEPHONE: 740 926-1663	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Belmont	Wayne	1		2-13-14	6	5
OWNER NAME: Michael Louden ADDRESS: 53370 Belmont Ridge Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1602	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Belmont	Wayne	1		2-13-160	6	5
OWNER NAME: Belmont Ridge Christian Church ADDRESS: 55905 Belmont Ridge Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-9900	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-1-1, 2-2-1	5	5

# C. RIGHT OF ENTRY INFORMATION

LAND OWNER INFORMATION	OWNERSHIP INFORMATION	COUNTY	TOWNSHIP	SECTION	LOT	DEED PARCEL NO.	T-	R-
OWNER NAME: Gerald & Kathy Loudon Jr. ADDRESS: 43475 Crabapple Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1504	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Belmont	Wayne	1		2-13-160	6	5
OWNER NAME: Robert & Carolyn Stephen ADDRESS: 43128 Anderson Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1276	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6		2-1-1, 2-2-1	5	5
OWNER NAME: Anthony & Mary Lou Patch ADDRESS: 43136 Anderson Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1026	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6		2-1-1, 2-2-1	5	5
OWNER NAME: David & Judy Anderson ADDRESS: 43119 Anderson Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1392	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6		2-1-1, 2-2-1	5	5

# C. RIGHT OF ENTRY INFORMATION

LAND OWNER INFORMATION	OWNERSHIP INFORMATION	COUNTY	TOWNSHIP	SECTION	LOT	DEED PARCEL NO.	T.	R.
OWNER NAME: Mary Ann Stewart ADDRESS: 52941 State Route 145 CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: Unlisted	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-1-1, 2-2-1	5	5
OWNER NAME: Luke & Anita Ice ADDRESS: 52988 Belmont Ridge Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-2367	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-1-1, 2-2-1	5	5
OWNER NAME: Calvin & Pauline Roach Sr. ADDRESS: 52976 State Route 145 CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: Unlisted	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-1-1, 2-2-1	5	5
OWNER NAME: George & Pamela Hoover ADDRESS: 52450 Cherry Ridge Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1135	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-3-5	5	5

# C. RIGHT OF ENTRY INFORMATION

LAND OWNER INFORMATION	OWNERSHIP INFORMATION	COUNTY	TOWNSHIP	SECTION	LOT	DEED PARCEL NO.	T-	R-
OWNER NAME: Robert & Susan Darby ADDRESS: 52995 State Route 145 CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1814	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6		2-1-1, 2-2-1	5	5
OWNER NAME: Emma Parr ADDRESS: 52985 State Route 145 CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1529	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6		2-1-1, 2-2-1	5	5
OWNER NAME: Kevin & Carla Kanzigg ADDRESS: 43110 Anderson Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1752	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6		2-1-1, 2-2-1	5	5
OWNER NAME: William & Bonnie Reed II ADDRESS: 52925 State Route 145 CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1422	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6, 12		2-3-30, 2-3-6 2-3-19	5	5

# C. RIGHT OF ENTRY INFORMATION

LAND OWNER INFORMATION	OWNERSHIP INFORMATION	COUNTY	TOWNSHIP	SECTION	LOT	DEED PARCEL NO.	T-	R-
OWNER NAME: John Palmer Jr. ADDRESS: 55037 New Castle Road CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1053	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	12		2-3-19	5	5
OWNER NAME: Ida Campbell ADDRESS: 52469 State Route 145 CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-9118	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	12		2-3-19, 2-3-20, 2-3-23	5	5
OWNER NAME: Angela & Ronald Palmer ADDRESS: 52698 Ohio Avenue CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-2006	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6		2-1-1, 2-2-1	5	5
OWNER NAME: Ryan & Margaret Turner ADDRESS: 52985 State Route 145 CITY, STATE, ZIP: Beallsville, OH 43716 TELEPHONE: 740 926-1529	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunsbury	6		2-1-1, 2-2-1	5	5

# C. RIGHT OF ENTRY INFORMATION

LAND OWNER INFORMATION	OWNERSHIP INFORMATION	COUNTY	TOWNSHIP	SECTION	LOT	DEED PARCEL NO.	T-	R-
OWNER NAME: Benjamin Mellott c/o John C. Mellott  ADDRESS: 52418 State Route 145  CITY, STATE, ZIP: Beallsville, OH 43716  TELEPHONE: 740 926-1480	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-3-5, 2-3-25	5	5
OWNER NAME: Herman Crooks Jr.  ADDRESS: 53345 Crabapple Road  CITY, STATE, ZIP: Beallsville, OH 43716  TELEPHONE: 740 926-1470	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-3-26	5	5
OWNER NAME: Phyllis Thomas  ADDRESS: 41120 Golf Course Road  CITY, STATE, ZIP: Beallsville, OH 43716  TELEPHONE: 7401 926-1139	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-1-1, 2-2-1	5	5
OWNER NAME: James & Cinde Hranko  ADDRESS: 43151 Anderson Road  CITY, STATE, ZIP: Beallsville, OH 43716  TELEPHONE: 740 926-1681	<input checked="" type="checkbox"/> Surface – UG Workings area <input type="checkbox"/> Coal <input checked="" type="checkbox"/> Non-coal mineral	Monroe	Sunbury	6		2-1-1, 2-2-1	5	5



# C. RIGHT OF ENTRY INFORMATION

LAND OWNER INFORMATION	OWNERSHIP INFORMATION	COUNTY	TOWNSHIP	SECTION	LOT	DEED PARCEL NO.	T-	R-
OWNER NAME: Consolidated Land Company ADDRESS: 29525 Chagrin Blvd Suite 300 CITY, STATE, ZIP: Pepper Pike, OH 44124 TELEPHONE: (216) 765-8333	<input type="checkbox"/> Surface – UG Workings area <input checked="" type="checkbox"/> Coal <input type="checkbox"/> Non-coal mineral	Belmont	Wayne	1		2-13-14 2-13-121 2-13-160	6	5
				7		2-5-25, 2-5-27, 2-5-28, 2-5-29, 2-5-30, 2-5-35, 2-5-37, 2-5-40, 2-5-41, 2-63-1, 2-63-14		
		Monroe	Sunbury	6		2-1-1, 2-2-1, 2-3-5, 2-3-6, 2-3-25, 2-3-26, 2-3-30	5	5
				12		2-3-19, 2-3-20, 2-3-23		

- (2) Provide the following information for the holders of record of any leasehold interest in the coal to be mined.

Leaseholder Name **American Energy Corporation**

Address **43521 Mayhugh Hill Road**

City **Beallsville** State **OH** Zip **43716** Telephone **(740) 926-9152**

Leaseholder Name

Address

City State Zip Telephone

Submit and identify additional pages necessary to complete response.

- (3) Are there purchasers of record under a real estate contract of the coal to be mined?

Yes ☐ No ☒ If "yes," submit Purchasers of Record.

- (4) Is any owner, holder or purchaser listed in items C (1) or (2), a business entity other than a single proprietorship?

Yes ☒ No ☐ If "yes," submit Other Business Entities.

- (5) Does the applicant hold lands, interests in lands, options or pending bids on interests for lands that are contiguous to this application area?

Yes ☐ No ☒ If "yes," list those that are contiguous to this application area.

N/A

- (6) Is it anticipated that mining permits would be sought for any of those lands described in item C (5) above?

Yes ☐ No ☐ If "yes," describe contiguous properties for which permits may be sought, to include the size, sequence and timing of future mining permits.

N/A

- (7) Identify the right of entry documentation that is being provided that allows for coal mining operations within the underground workings:

- ☐ A copy of the right-of-entry documents attached as addenda, or  
☒ A Right-of-Entry Affidavit

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OTHER BUSINESS ENTITIES

Applicant's Name **American Energy Corporation**

A separate attachment is to be submitted for each business entity.

Name of business entity **American Energy Corporation**

Statutory agent **A & H Statutory Service Corporation**

Street Address **1100 Huntington Bldg**

City **Cleveland** State **Ohio** Zip **44114-1425**

Person's name **Robert E. Murray** Position **Director, President**

Street Address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

Person's name **Michael McKown** Position **Secretary**

Street Address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

Person's name **James Turner Jr.** Position **Treasurer**

Street Address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

Person's name **Robert Putsock** Position **Assistant Treasurer**

Street Address **43521 Mayhugh Hill Road**

City **Beallsville** State **Ohio** Zip **43716**

Part 1: Section C

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

OTHER BUSINESS ENTITIES

Applicant's Name **American Energy Corporation**

A separate attachment is to be submitted for each business entity.

Name of business entity **Consolidated Land Company**

Statutory agent **Stephen C. Ellis #842696**

Street Address **925 Euclid Avenue, Suite 1100**

City **Cleveland** State **Ohio** Zip **44115**

Person's name **Robert D. Moore** Position **President, Treasurer, Assistant Secretary & Director**

Street Address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Ohio** Zip **44122**

Person's name **Michael O. McKown** Position **Secretary**

Street Address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Ohio** Zip **44122**

Person's name **Elmer A. Mottillo** Position **Assistant Secretary**

Street Address **29325 Chagrin Boulevard, Suite 300**

City **Pepper Pike** State **Ohio** Zip **44122**

Person's name                      Position

Street Address

City                      State                      Zip

Part 1: Section C

OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT

RIGHT-OF-ENTRY AFFIDAVIT

Applicant's Name American Energy Corporation

RIGHT-OF-ENTRY AFFIDAVIT

State of Ohio, Belmont County, ss. James R. Turner, Jr. being first duly sworn, says that the following described documents convey to the applicant the legal right explained below and is a subject of litigation as shown below.

Type of document Lease

Execution Date February 1, 2002

Expiration Date Until all mineable and merchantable coal has been depleted

Parties: From Consolidated Land Company to American Energy Corporation

Description of land: Number of Acres 1439.74

County Belmont/Monroe Township Wayne/Sunsbury

Section 1 & 7/6 & 12 Lot       

Explanation of legal rights claimed See Addendum to Right-of-Entry Affidavit

Pending litigation Yes ☐ No ☒

[Signature] 2/26/2010 Treasurer  
Signature of Affiant Date Position

Sworn to before me and subscribed in my presence this 26 day of, Feb, 2010

[Signature]  
Notary Public

  
GREG S. WILLIAMS  
NOTARY PUBLIC, STATE OF OHIO  
MY COMMISSION EXPIRES FEBRUARY 10, 2011  
28, 2011

Part 1: Section C

**Addendum to Right-of-Entry Affidavit  
American Energy Corporation**

**Leased Mining Rights  
Consolidated Land Company to American Energy Corporation**

**Mining rights conveyed by Wyoming Pocahontas Land Co., (fka Youghioghenny and Ohio Coal Company) to Consolidated Land Company in Volume 707 Page 1, Recorder's Office, Belmont County, Ohio: Page 385, Parcel No. 51 (2-5-25); Page 386, Parcel No. 53 (2-5-27); Page 387, Parcel Nos. 54,55, and 56 (2-5-28, 2-5-29, 2-5-30); Page 389, Parcel No. 61 (2-5-35); Page 389, Parcel No. 63 (2-5-37); Parcel No. 66 (2-5-40); Page 391, Parcel No. 67 (2-5-41); Page 506, Parcel No. 7 (12) (2-13-14); Page 526, Parcel No. 58 (71) (2-13-121); Page 533, Parcel No. 76 (9) (2-13-160); Page 755, PART 63, First Tract (2-63-1); Second Tract (2-63-14).**

**Mining rights conveyed by Wyoming Pocahontas Land Co., (fka Youghioghenny and Ohio Coal Company) to Consolidated Land Company in Official Records Volume 11 Page 989, Recorder's Office, Monroe County, Ohio: Page 992, Tract No. 1, Parcel No. 1 (2-1-1, 2-2-1); Page 999, Tract No. 3 (2-3-5); Parcel No. 4 (2-3-6); Page 1006, Parcel No. 15 (2-3-19), Parcel No. 16 (2-3-20); Page 1008, Parcel No. 19 (2-3-23); Page 1009, Tract No. 3, Parcel No. 21 (2-3-25); Page 1010, Parcel No. 22 (2-3-26); Page 1012, Parcel No. 25 (2-3-30).**

**Addendum to Right-of-Entry Affidavit  
American Energy Corporation**

**Table A  
Summary of Exhibit "A"  
Limited Warranty Deed, Volume 707 Page 1  
Wyoming Pocahontas Land Co., to Consolidated Land Company**

<b>Deed Volume/Page</b>	<b>Parcel/Tract</b>	<b>Map Identification No.</b>
707/385	Parcel No. 51	2-5-25
707/386	Parcel No. 53	2-5-27
707/387	Parcel No's 54, 55, and 56	2-5-28, 2-5-29, 2-5-30
707/389	Parcel No. 61	2-5-35
707/389	Parcel No. 63	2-5-37
707/391	Parcel No. 66	2-5-40
707/391	Parcel No. 67	2-5-41
707/506	Parcel No. 7(12)	2-13-14
707/526	Parcel No. 58(71)	2-13-121
707/533	Parcel No. 76(9)	2-13-160
707/755	Part 63, First Tract	2-63-1
707/755	Part 63, Second Tract	2-63-14
O.R. 11/992	Tract No. 1 / Parcel No. 1	2-1-1, 2-2-1
O.R. 11/999	Parcel No. 3 / Tract No. 3	2-3-5
O.R. 11/999	Parcel No. 4 / Tract No. 3	2-3-6
O.R. 11/1006	Parcel No. 15	2-3-19
O.R. 11/1006	Parcel No. 16	2-3-20
O.R. 11/1008	Parcel No. 19	2-3-23
O.R. 11/1009	Tract No. 3 / Parcel No. 21	2-3-25
O.R. 11/1010	Parcel No. 22	2-3-26
O.R. 11/1012	Tract No. 3 / Parcel No. 25	2-3-30



**American Energy Corporation  
Addendum to Part 1, C. (7)  
Summary of Mining Rights**

**Consolidated Land Company  
to  
American Energy Corporation**

**ITEM 1. Mining rights to the following Parcels contained in Deed Volume 707 Page 1: Page 385, Parcel No. 51 (2-5-25).**

**“TOGETHER with the free and uninterrupted use and enjoyment of right of way into, upon and under said land, at such points and in such manner as may be considered proper and necessary for the advantageous and economical operation thereof, and in the digging and mining of said coal, and without liability therefore and hereby waiving any and all damages that might or could arise therefrom by reason of such digging, mining and carrying away all of said coal, together with the privilege of carrying, transporting and removing through the described premises, this and other coal now owned or acquired by said Grantee, its successors or assigns, generally freed, clear and discharged of any servitude whatever to the overlying land or anything therein or thereon. The said Grantors reserved, however to them, their heirs and assigns, the right to drill through said coal for oil and gas, and water, etc. The said Grantee, its successors and assigns, have the right to purchase at any time as much of the surface (reserving three acres around the buildings, if any buildings are on the land) of said land as may be necessary in mining, manufacturing, or marketing said coal, at the price of \$150.00 per acre, which payment shall entitle them to a deed in fee simple for the same. Said grantee shall have the right to enter upon said farm to drill and test said coal without liability for damages, except as to growing crops.”**

**“THIS agreement shall apply to the legal representatives and assigns of all the parties hereto.”**

**ITEM 2. Mining rights to the following Parcels contained in Deed Volume 707 Page 1: Page 386, Parcel No. 53 (2-5-27); Page 387, Parcel Nos. 54, 55, and 56 (2-5-28, 2-5-29, 2-5-30); Page 389, Parcel No. 61 (2-5-35).**

**“ALL the coal contained in the vein commonly known as the Pittsburgh vein and geologically known as Seam No. 8 and underlying the following Parcels Nos. 52, 53, 54, 55, 56, 57, 58, 59, 60, 61 and 62.”**

**"TOGETHER with the free and uninterrupted right of way into, upon and under the above described Parcels of land numbered from 52 to 62 both inclusive, at such points and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining and ventilating and carrying away said coal, hereby waiving all surface damages or damages of any sort arising therefrom or from the removal of all said coal, together with the privilege of mining and removing through said described premises other coal belonging to the grantee, its successors and assigns, or which may be hereafter acquired by said grantee, its successors and assigns."**

**ITEM 3. Mining rights to the following Parcels contained in Deed Volume 707 Page 1: Page 389, Parcel No. 63 (2-5-37); Page 391, Parcel No. 66 (2-5-40).**

**"Together with the free and uninterrupted right of way into and under the above described Parcel at such points and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining and ventilating and carrying away said coal, hereby waiving all surface damages or damages of any sort arising therefrom or from the removal of all said coal, together with the privilege of mining and removal of all said coal, together with the privilege of mining and removing through said premises other coal belonging to the grantee herein, its successors and assigns, or which may hereafter be acquired by said grantee, its successors and assigns."**

**ITEM 4. Mining rights to the following Parcels contained in Deed Volume 707 Page 1: Page 391, Parcel No. 67 (2-5-41).**

**"TOGETHER with the free and uninterrupted right of way into and under said last above described tract, at such points and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining, and ventilating and carrying away said coal, (herein conveyed to said grantee, its successors and assigns, all surface damages or damages of any sort arising therefrom or from the removal of all of said coal) together with the privilege of mining and removing through said described premises, other coal, now owned or hereafter acquired by said grantee, its successors or assigns, the same rights and privileges as are contained in said deed of said George W. Titlow to said Charles F. Randolph hereinbefore recited to use and occupy and purchase surface of the tract of land last above described at the price and on the terms, conditions, covenants, and agreements as are specified in said deed, are hereby assigned, transferred and set over to the grantee herein, its successors, and assigns."**

**ITEM 5. Mining rights to the following Parcels contained in Deed Volume 707 Page 1: Page 504, PART 13, BLOCK I; Page 506, Parcel No. 7 (12) (2-13-14); Page 526, Parcel No. 58 (71) (2-13-121).**

**"All the stone coal contained in the vein commonly known as the Pittsburgh Vein and geologically known as Seam No. 8, in and underlying all the following tracts or parcels of land described in this Block numbered I hereof, situated in the County of Belmont and State of Ohio:"**

**"Together with all easements, options, rights and privileges described in, and granted by, said deed from The Cleveland Trust Company, Trustee, to S.H. Robbins, dated July 1<sup>st</sup>, 1918, under said headings, "PARCEL NO. 1" to "PARCEL NO. 71", inclusive, thereof, which easements, options, rights and privileges are therein defined as being those described in the respective deeds from the various grantors to Peter M. Hitchcock and William D. Rees, above referred to, and as being contained in said various deeds in form and language as follows:**

**"Together with the free and uninterrupted rights of way into, upon and under said described land, at such points, and in such manner as may be useful for the purpose of digging, draining and ventilating, and mining and removing said coal, together with the privilege of mining and removing through said described premises other coal belonging to said Grantees, their heirs and assigns, or which may hereafter be acquired, together with the right and privilege to make drains on the surface, and air holes, and change the same as the convenience of mining may require, together with all mining privileges on said surface or under it necessary for the removal of all of the Pittsburgh Vein underlying the same and neighboring properties now owned, or hereafter acquired by said Grantees, their heirs and assigns; and said Grantees, their heirs and assigns, shall in no wise be liable for damages for failure to support the overlying surface, or for the sinking or falling in of said surface, or for destroying any spring or well of water, or for diverting any water flow or natural stream by reason of the removal of said coal or the exercise of any of the above mining privileges."**

**"It is expressly understood and agreed that the enumeration herein is in enlargement and not in restriction of the incidental rights accruing to said Grantees, by virtue of the within grant of coal and mining privileges."**

**"And together with the right to use and occupy such amount of surface of the above described land as may in the opinion of said Grantees, their heirs and assigns, from time to time, be useful for the purpose of mining said coal or exercising any rights incidental thereto, or that may be useful for the deposit of gob or refuse from said mines, or for carrying on the coal business and for the erection of buildings and machinery and tenant houses, and all other buildings needful or useful to carry on**

the coal business, or for the construction thereon of tracks, shafts, mine openings and other structures, and for the operation of railroads; and the said Grantors do, for themselves and their heirs, executors, administrators and assigns, covenant and agree that Grantors will upon demand and payment of, at the rate not exceeding One Hundred Dollars per acre, by the Grantees, their heirs and assigns, execute and deliver unto said Grantees, their heirs, and assigns, a good and sufficient deed of General Warranty, (and furnish therewith a complete Abstract of Title showing said lands to be free and clear of liens and encumbrances), conveying in fee simple, clear of liens and encumbrances, such amount of the above described land as Grantees in their opinion may require for the purposes herein next above set forth, and said Grantees agree to purchase the same at not exceeding said above stipulated price per acre."

"The Grantors reserve the rights to bore or dig through said vein of coal for oil or gas, but such boring or digging shall not interfere with the mining or removal of said coal."

**ITEM 6.** Mining rights to the following Parcels contained in Deed Volume 707 Page 1: Page 533, Parcel No. 76 (9) (2-13-160).

"Together with the free and uninterrupted rights of way into, upon and under said land at such points and in such manner as may be proper for the purpose of digging, draining and ventilating, and mining and removing said coal, together with the right of mining and removing through said premises other coal belonging to said Grantees, their heirs and assigns, or which may be hereafter acquired, together with the right to make drains on the surface, and air holes, and change the same as the convenience of mining may require, together with all mining privileges on said surface, or under it, necessary for the removal of all said coal underlying the same and neighboring properties now owned or hereafter acquired by said Grantees, their heirs and assigns, and waiving and releasing said Grantees, their heirs and assigns, from all liability for damages for failure to support the overlying surface, or for sinking or falling in of such surface, or for destroying any spring or well of water, or for diverting any water flow or natural stream by reason of the removal of such coal or the exercise of any of the above mining privileges, together with all incidental rights that shall or may accrue to the said Grantees, their heirs and assigns, by virtue of the within grant of coal and mining privileges."

"And the said Grantor does for herself and her heirs, executors, administrators and assigns, covenant and agree that Grantor will upon demand and payment of at the rate of One Hundred Dollars per acre by the Grantees, their heirs and assigns, convey in fee simple unto the said Grantees, their heirs and assigns, such amount

of said above described surface as may, in the opinion of said Grantees, their heirs and assigns, from time to time, be useful for the purpose of mining said coal or exercising any right incidental thereto, or that may be useful for the deposit of gob or refuse from said mines or for carrying on the coal business, or for the erection of necessary buildings and machinery and tenant houses, and all other buildings necessary to carry on the coal business, or for the construction thereon of tracks, shafts, mine openings and necessary structures, and for the operation of railroads."

"And said Grantees do for themselves, their heirs and assigns, agree to pay for such real estate as may be used for the above purpose herein next above set forth at the rate of \$100 per acre."

"The Grantor reserves the right to operate through said coal for oil and gas."

**ITEM 7.** Mining rights to the following Parcels contained in Deed Volume 707 Page 1: Page 755, PART 63, First Tract (2-63-1); Second Tract (2-63-14).

"Together with the free and uninterrupted right of way into, upon and under said land, at such points, and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining and ventilating, and carrying away said coal, hereby waiving all surface damages or damages of any sort arising therefrom, or from the removal of all of said coal, together with the privilege of mining and removing through said described premises other coal belonging to the grantees, their heirs and assigns, or which may hereafter be acquired by said grantees, their heirs and assigns."

"Said grantors, for, themselves and their heirs and assigns, reserve the right to drill and operate through said coal for oil and gas."

"The grantees, their heirs and assigns, upon payment of \$100.00 per acre to the heirs and assigns of the original grantors of said coal lands, shall have the right to use surface land on Tracts 1 and 2."

**ITEM 8. Mining rights to the following Parcels contained in Monroe County Official Records, Volume 11 Page 989: Page 992, Tract No. 1, Parcel No. 1 (2-1-1, 2-2-1).**

**“Together with the free and uninterrupted rights of way into, upon and under said described land, at such points, and in such manner as may be useful for the purpose of digging, draining and ventilating, and mining and removing said coal, together with the privilege of mining and removing through said described premises, other coal belonging to said grantees, their heirs and assigns, or which may be hereafter acquired, together with the right and privilege to make drains on the surface, and air holes, and change the same as the convenience of mining may require, together with all mining privileges on said surface or under it necessary for the removal of all of the Pittsburgh Vein underlying the same and neighboring properties now owned, or hereafter acquired by said Grantees, their heirs and assigns, and said Grantees, their heirs and assigns, shall in no wise be liable for damages for failure to support the overlying surface, or for the sinking or falling in of said surface, or for destroying any spring or well of water or for diverting any water flow or natural stream by reason of the removal of said coal or the exercise of any of the above mining privileges.”**

**“It is expressly understood and agreed that the enumeration herein is in enlargement and not in restriction of the incidental rights accruing to said Grantees, by virtue of the within grant of coal and mining privileges.”**

**“And together with the right to use and occupy such amount of surface of the above described land as may in the opinion of said Grantees, their heirs and assigns, from time to time, be useful for the purpose of mining said coal or exercising any rights incidental thereto, or that may be useful for the deposit of gob or refuse from said mine, or for carrying on the coal business and for the erection of buildings and machinery and tenant houses, and all other buildings needful or useful to carry on the coal business, or for the construction thereon of tracks, shafts, mine openings and other structures, and for the operation of railroads, and the said Grantors, do for themselves and their heirs, executors, administrators and assigns, covenant and agree that Grantors will upon demand and payment of, at the rate not exceeding one hundred dollars per acre, by the Grantees, their heirs and assigns, execute and deliver unto said Grantees, their heirs and assigns, a good and sufficient deed of General Warranty (and furnish therewith a complete Abstract of title showing said lands to be free and clear of liens and encumbrances) conveying in fee simple, clear of liens, and encumbrances, such amount of the above described land as Grantees, in their opinion may require for the purposes herein next above set forth. And said Grantees agree to purchase the same at not exceeding said above stipulated price per acre.”**

**“The Grantors reserve the rights to bore or dig through said vein of coal for oil or gas, but such boring or digging shall not interfere with the mining or removal of said**

coal.”

**ITEM 9.** Mining rights to the following Parcels contained in Volume 11 Page 989 : Page 999, Tract No. 3 (2-3-5); Parcel No. 4 (2-3-6); Page 1006, Parcel No. 15 (2-3-19), Parcel No. 16 (2-3-20).

“Together with the free and uninterrupted right of way under, into and upon said land, at such points, and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining and ventilating and carrying away said coal, etc. (hereby waiving all surface damages or damages of any sort arising therefrom or from the removal of said coal), together with the privilege of mining and removing through said described premises other coal belonging to the grantee, his heirs and assigns, or which may be acquired by said grantee, his heirs and assigns. Said grantor, for himself and his heirs and assigns, reserve the right to drill and operate through said coal for oil and gas. It is understood and agreed between the parties hereto that the said grantor, and his heirs, shall be paid at the rate of \$100.00 per acre for all surface land taken and used for mining said coal by said grantee, his heirs and assigns.”

**ITEM 10.** Mining rights to the following Parcels contained in Volume 11 Page 989 : Page 1008, Parcel No. 19 (2-3-23).

TOGETHER with the free and uninterrupted use and enjoyment of the right of way into and under said tract of land at such points and in such manner as may be considered proper and necessary for the advantageous and economical operation of, and in the digging, mining and carrying away said coal and without liability therefore, and hereby waiving any and all damages that might or could arise therefrom by reason of such digging, mining and carrying away of said coal, together with the privilege of carrying, transferring and removing through said described premises said coal and other coal now owned or hereafter acquired by said grantee, its successors and assigns, and generally freed, clear and discharged of any servitude whatever to the overlying land or anything therein or thereon.”

**ITEM 11.** Mining rights to the following Parcels contained in Volume 11 Page 989 : Page 1009, Tract No. 3, Parcel No. 21 (2-3-25).

“All oil and gas in and underlying said described premises is excepted and reserved, with all rights and privileges on the surface of the lands to lease, collect rentals and royalties, to drill and operate for oil and gas, as now provided for in oil and gas lease



now in existence and on said above described lands."

BEING all the coal and mining rights excepted and reserved in deed dated July 8, 1922 to Cecil H. Perkins from Margaret C. Egger, et al, recorded in Vol. 92, Page 500, Records of Deeds, Monroe County, Ohio, which reads as follows: "All coal in the underlying above described lands is herein excepted and reserved, and any surface land that may be needed by the Grantors, their executors, administrators and assignees, for the mining, operating and removal of the coal shall be paid for the agreed price of One Hundred Dollars per acre, and all surface damages are excepted and waived ... be the same more or less but subject to all legal highways," and said coal and mining rights were conveyed by Margaret C. Egger, et al, to the Monbel Company by deed dated September 28, 1948 and recorded in Vol. 122, Page 100, Records of Deeds, Monroe County, Ohio.

ITEM 12. Mining rights to the following Parcels contained in Volume 11 Page 989 : Page 1010, Parcel No. 22 (2-3-26).

Together with the mining rights reserved in the conveyance dated April 1, 1908, to Israel Coon by William A. Williams and his wife Mary E. Williams, which reads as follows: "Reserving all coal, oil and gas beneath the surface and reserving the right to mine, lease, sell, operate for, and market the same, and all the privileges necessary to operate for and mine the same, including water and pipeline rights, the right of way over and under the surface, and the rights of ingress and egress without being held liable for damage to the surface and the growing crops," and the coal and mining rights of said reservation were conveyed by William A. Williams to Board of Foreign Missions of the Methodist Episcopal Church by deed dated November 13, 1916 and recorded in Vol. 84, Page 416 of the Records of Deeds, Monroe County, Ohio.

ITEM 13. Mining rights to the following Parcels contained in Volume 11 Page 989 : Page 1012, Parcel No. 25 (2-3-30).

"TOGETHER with the free and uninterrupted right of way into, upon, and under said land at such points and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining and ventilating and carrying away said coal (hereby waiving all surface damages or damages of any sort arising therefrom or from the removal of all of said coal) together with the privilege of mining and removing through, upon and over said described premises other coal belonging to said party of the record part, his heirs and assigns, or which may hereafter be acquired."

SAID grantors herein, for themselves, their heirs and assigns, hereby reserve the

right to drill and operate through said coal for oil and gas or other minerals without liability for damages growing out of the same. It is further made a condition in this deed, and the same is taken subject thereto, that if any surface ground is necessary to be taken in the operation for coal under this deed, the same may be taken, but the amount of which and the location thereof is to be determined when the same is desired to be used and at a price then to be mutually agreed upon between the grantors in this deed or their assigns, and the grantees herein and his assigns."

"SAID grantees shall have the right to enter upon said land to drill and test said coal without liability for damages."

"Further, Seller shall quit claim to Purchaser the following mining rights:

Together with the full right to explore for, test, work, mine, produce, develop, clean, process, sell and remove any or all of the coal in and underlying the premises by any surface or underground mining method or machinery, whether now or hereafter known, including, but not limited to, the strip mining process, auger or highwall mining process, and longwall mining process; the right of ingress, egress and regress to, from, over and across said premises and adjoining premises owned or controlled by Grantee for the purpose of removing and transporting coal from within or without said premises without additional charge; the right to bring upon said premises men, machinery, materials and equipment necessary, convenient or useful for the exploring, testing, mining and marketing of said coal by the methods hereunder authorized; the right to construct, erect, use, maintain, repair, replace, move, remove, and relocate in or under the premises roads, conveyor systems, machinery, railroad tracts, shops, power and communications lines and other equipment and facilities; the right to transport personnel, supplies, equipment, coal and other materials into, through and under said premises; the right to mine said coal without any requirement to provide any lateral or subjacent support to the premises, or any liability to Grantee for any damage which may result either to the surface of, or any strata in, on or under said premises or to any surface or underground water supplies or sources located thereon or therein or to any structures now on or hereafter constructed on said premises; and all such other rights, powers and privileges as may be necessary, useful or incidental thereto, including, without limitation, the right to make and use openings and underground passages for any purposes, including, but not limited to, ventilation and drainage, and to disturb so much of the surface and subsurface of the premises as may be useful or incidental in accordance with the mining methods adopted by Grantee, including the rights to deposit spoil, rock earth and gob from said premises or adjoining premises, on said premises."

"The Grantee shall have the right to mine the fifty (50) foot property line barrier

wherever Grantee controls, coal adjacent to said premises or wherever Grantee secures a waiver of the fifty (50) foot property line barrier requirement from owners of, or operators upon, adjacent properties."

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PAID 3134-

11787

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LIMITED WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS: THAT, WYOMING POCAHONTAS LAND CO., (fka Youghiogheny and Ohio Coal Company) an Ohio corporation, with office at 39 Robin Place, Beckley, WV 25801, hereinafter called "GRANTOR", in consideration of the sum of Ten Dollars (\$10) and other valuable considerations to it paid by Consolidated Land Company, an Ohio corporation, whose tax mailing address is Box 505, 34208 Aurora Road, Solon, Ohio 44139, hereinafter called "GRANTEE", the receipt and sufficiency of which are hereby acknowledged, does hereby GRANT, BARGAIN, SELL AND CONVEY with limited warranty covenants, to the Grantee, its successors and assigns, all of the remaining coal contained in or underlying the tracts of land more particularly described on Exhibit "A", attached hereto and made a part hereof.

TOGETHER with such mining rights and other rights and privileges pertinent to the tracts set forth on Exhibit "A".

(HEREINAFTER CALLED THE "Premises").

The Grantor makes no guarantee or warranty with respect to the quality or quantity of coal remaining in said premises herein conveyed and Grantee accepts said premises known as the Allison Mine in its present condition and circumstance.

TO HAVE AND TO HOLD such premises, unto the said Grantee, its successors and assigns, forever, EXCEPT AND SUBJECT as hereinbefore provided, and expressly SUBJECT to all legal highways, exceptions, reservations, conditions, servitudes, easements, rights, limitations and restriction shown by instrument of record.

AND the said Grantor hereby covenants with the said Grantee that said premises are free and clear from all encumbrances by, from or through the said Grantor, and except and subject as hereinbefore provided, and that the Grantor will warrant and defend the same to the Grantee, only as against the lawful claims

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and demands of all persons claiming by, through or under the said Grantor herein, but against none other.

All of the aforescribed Parcels are conveyed SUBJECT TO:

(1) All matters of record as of the 1st day of March, 1995, said matters of record include but are not limited to the provisions contained in the description hereinbefore set forth and the provisions contained in all prior conveyances of record;

(2) All liens for nondelinquent real property taxes and assessments;

IT is the intent of the Grantor herein to convey to the Grantee, its successors and assigns all of the Pittsburgh No. 8 coal and mining rights appurtenant thereto, situated in Belmont County, Ohio, of which the Grantor is seized at the date hereof.

IN WITNESS WHEREOF, Grantor has caused its name to be hereunto subscribed by its duly authorized officers, this 24th day of February, 1995.

Signed and acknowledged  
in the presence of:

Rama Blevins  
Rama Blevins

David Dove  
David Dove

Denise V. Stewart  
Denise V. Stewart

Karen Joseph  
Karen Joseph

[NOTE: TYPE OR PRINT NAME OF  
WITNESSES UNDER EACH SIGNATURE]

WYOMING POCAHONTAS LAND CO.,  
an Ohio Corporation

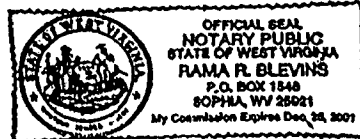
By Hubert Payne  
Hubert Payne  
Its President

By Lauren Slone  
Lauren Slone  
Its Secretary

STATE OF West Virginia,  
COUNTY OF Putnam, SS:

On this the 24th day of February, 1995, before me, the undersigned Notary Public, personally appeared Hubert Payne, who acknowledged himself to be President of Wyoming Pocahontas Land Co., an Ohio corporation, and that as such officer being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation as President.

IN WITNESS WHEREOF, I hereunto set my hand and Notarial seal.



Rama R. Blevins  
Notary Public  
My Commission Expires: Dec 31, 2001

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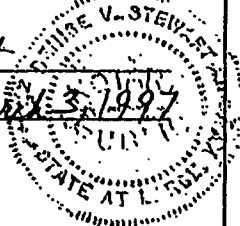
STATE OF Kentucky  
COUNTY OF Wayne, SS:

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On this the 2<sup>nd</sup> day of March, 1995, before me, the undersigned Notary Public, personally appeared Lauren Slone, who acknowledged herself to be Secretary of Wyoming Pocahontas Land Co., an Ohio corporation, and that as such officer being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation as Secretary.

IN WITNESS WHEREOF, I hereunto set my hand and Notarial seal.

Denise V. Stewart  
Notary Public  
My Commission Expires: March 3, 1997



This Instrument Prepared By:  
HANLON, DUFF, PALEUDIS & ESTADT CO., LPA  
46457 National Road West  
St. Clairsville, OH 43950

NEW DESCRIPTION  
NECESSARY FOR FUTURE  
TAX MAP TRANSFER

BY F. F. Bennett  
FRED F. BENNETT  
BELMONT COUNTY ENGINEER

TRANSFERRED  
FEE \$62.00 DATE 3-24-95  
SECT. 319.202 R.C. FEE \$14,400.00  
J.A. RAPPANO, AUDITOR  
Daniel Appellou DEPUTY

DELMONT CO. RECORD OFFICE  
VOL 707 PAGE 1  
MAR 24 3 43 PM '95  
RECORDED MAR 27 1995  
STANLEY S. H. C. CIO  
RECORD

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SAID Grantors do not hereby convey any surface privileges for mine openings or any other purpose whatever. Said Grantors reserve the right to operate for oil and gas through said coal, so as not to interfere with mining operations.

BEING a part of the seventh tract (marked "Fourth Tract" in the deed) conveyed by Lee Evans and Martha A. Evans, husband and wife, to Henry James, by deed dated March 30, 1895 and recorded in Volume 109, Page 258 of the Records of Deeds in Belmont County, Ohio.

PARCEL NO. 50

BEING the Pittsburgh No. 8 coal with the mining rights under the following Parcel: Situated in the Township of Wayne, County of Belmont and State of Ohio and known as and being a part of the West half of the Southwest quarter of Section 9, Township 6 and Range 5 and bounded and described as follows: Beginning at the quarter post on the West side of Section 9; thence along the section line South 64 rods (1056 feet); thence South 85-3/4° East 80 rods (1320 feet) to the East side of the West half of the Southwest quarter of said Section 9; thence North 64 rods (1056 feet) to the half section line; thence by said half section line North 85-3/4° West 80 rods (1320 feet) to the place of beginning, containing 30.90 acres.

TOGETHER with the free and uninterrupted use and enjoyment of right of way into, upon and under said land, at such points and in such manner as may be considered proper and necessary for the advantageous and economical operation thereof, and in the digging and mining of said coal, and without liability therefore and hereby waiving any and all damages that might or could arise therefrom by reason of such digging, mining and carrying away all of said coal, together with the privilege of carrying, transporting and removing through the described premises, this and other coal now owned or acquired by said Grantee, its successors or assigns, generally freed, clear and discharged of any servitude whatever to the overlying land or anything therein or thereon. The said Grantors reserved, however to them, their heirs and assigns, the right to drill through said coal for oil and gas, and water, etc. The said Grantee, its successors and assigns, have the right to purchase at any time as much of the surface (reserving three acres around the buildings, if any buildings are on the land) of said land as may be necessary in mining, manufacturing, or marketing said coal, at the price of \$150.00 per acre, which payment shall entitle them to a deed in fee simple for the same. Said grantee shall have the right to enter upon said farm to drill and test said coal without liability for damages, except as to growing crops.

THIS agreement shall apply to the legal representatives and assigns of all the parties hereto.

BEING a part of the same coal and mining rights as conveyed by Cloyd L. Barricklow to The Monbel Company in the Forty-Eighth Tract in the Sheriff's Deed dated March 19, 1946, and recorded in Volume 357, Page 639, in the Records of Deeds, Belmont County, Ohio.

PARCEL NO. 51 2-5-25

BEING the Pittsburgh No. 8 coal with the mining rights under the following premises: Situated in the Township of Wayne, County of Belmont and State of Ohio and being a part of the Southeast quarter of Section 7, Township 6 and Range 5 and bounded and described as follows: Beginning for the same at a stone on the East boundary line of Section 9, 109.24 rods (1802.45 feet) North of the Southeast corner of the Section; thence South 83° West 182 rods (3003 feet) to the County Road; thence by same South 18 rods (297.00 feet); thence East 181 1/2 rods (2994.75 feet) to the



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section line; thence by same North 29.95 rods (494.18 feet) to the place of beginning; containing 26½ acres, being the same coal lands conveyed by Mary E. Sampson et al to A. A. & H. A. Caldwell as appears in Volume 256, Page 265 of the Deed Records of Belmont County, Ohio.

TOGETHER with the free and uninterrupted use and enjoyment of right of way into, upon and under said land, at such points and in such manner as may be considered proper and necessary for the advantageous and economical operation thereof, and in the digging and mining of said coal, and without liability therefore and hereby waiving any and all damages that might or could arise therefrom by reason of such digging, mining and carrying away all of said coal, together with the privilege of carrying, transporting and removing through the described premises, this and other coal now owned or acquired by said Grantee, its successors or assigns, generally freed, clear and discharged of any servitude whatever to the overlying land or anything therein or thereon. The said Grantors reserved, however to them, their heirs and assigns, the right to drill through said coal for oil and gas, and water, etc. The said Grantee, its successors and assigns, have the right to purchase at any time as much of the surface (reserving three acres around the buildings, if any buildings are on the land) of said land as may be necessary in mining, manufacturing, or marketing said coal, at the price of \$150.00 per acre, which payment shall entitle them to a deed in fee simple for the same. Said grantee shall have the right to enter upon said farm to drill and test said coal without liability for damages, except as to growing crops.

THIS agreement shall apply to the legal representatives and assigns of all the parties hereto.

BEING the same coal and mining rights as conveyed by Cloyd L. Barricklow, to The Monbel Company in the 51st Tract in Sheriff's Deed dated March 19, 1946, and recorded in Volume 357, Page 639, in the Records of Deeds, Belmont County, Ohio.

ALL the coal contained in the vein commonly known as the Pittsburgh vein and geologically known as Seam No. 8 and underlying the following Parcels Nos. 52, 53, 54, 55, 56, 57, 58, 59, 60, 61 and 62.

PARCEL NO. 52

SITUATED in the Township of Wayne, County of Belmont and State of Ohio and being a part of the Northwest Quarter of Section 8, Township 6, Range 5, beginning for the same at the Southwest corner of said quarter section; thence North with the West boundary line of said Section 10.77 chains (710.82 feet); thence East 20.15 chains (1329.90 feet); thence South 10.77 chains (710.82 feet) to the South boundary line of said quarter section; thence West with said South boundary line 20.15 chains (1329.90 feet) to place of beginning, containing 21.70 acres, more or less.

TOGETHER with the identical mining rights as set forth after Parcel No. 62.

PARCEL NO. 53 2-5-27

SITUATED in the Township of Wayne, County of Belmont and State of Ohio, being in the Southeast corner of the Southwest quarter of Section 7, Township 6, Range 5, beginning at a stone in the section line between Monroe and Belmont Counties and the Southeast corner of the lands of Mary Walters; thence with said section line South 85½° East 20 rods (330 feet) to a stake; thence North 13° East 20.5 rods (338.25 feet) to a stone; thence North 5½° East 23 rods (379.50 feet) to a stone; thence North 85½° West 20 rods (330 feet) to a stake; thence South 31½° West

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6.5 rods (107.25 feet) to a stone; thence South  $4\frac{1}{4}^{\circ}$  West 40 rods (660 feet) to a stone in section line; the place of beginning, containing 6.12 acres, more or less.

TOGETHER with the identical mining rights as set forth after Parcel No. 62.

PARCEL NO. 54 2-5-28

SITUATED in the Township of Wayne, County of Belmont and State of Ohio, being part of the Southwest Quarter of the Southeast quarter of Section 7, Township 6, Range 5, beginning for the same at a stone by the public road and run North  $86\frac{1}{4}^{\circ}$  East 180 rods and 15 links (2929.90 feet) to a stone; thence North  $4\frac{1}{4}^{\circ}$  East 43 rods (709.50 feet) to center of run; thence North  $70^{\circ}$  West 42 rods (693 feet) to a stake; thence with the meanderings of the run South  $50^{\circ}$  West 31.5 rods (519.75 feet); thence North  $44^{\circ}$  West 20.8 rods (343.20 feet); thence South  $41^{\circ}$  West 17.7 rods (292.05 feet); thence South  $39\frac{1}{4}^{\circ}$  West 7.7 rods (127.05 feet); thence South  $63\frac{1}{4}^{\circ}$  West 7.5 rods (123.75 feet); thence South  $88\frac{1}{4}^{\circ}$  West 15.25 rods (251.63 feet); thence North  $88^{\circ}$  West 22.5 rods (371.25 feet); thence South  $34\frac{1}{4}^{\circ}$  West 15.5 rods (255.75 feet); thence South  $49\frac{1}{4}^{\circ}$  West 10.4 rods (171.60 feet); thence North  $67^{\circ}$  West 10 rods (165 feet); thence North  $82\frac{1}{4}^{\circ}$  West 23 rods (379.50 feet); thence South  $11\frac{1}{4}^{\circ}$  East 23 rods and 21 links (392.61 feet) to the beginning; containing 44.68 acres more or less.

TOGETHER with the identical mining rights as set forth after Parcel No. 62.

PARCEL NO. 55 2-5-29

SITUATED in the Township of Wayne, County of Belmont and State of Ohio, being part of Section 7, Township 6, and Range 5. BEGINNING at the Northeast corner of the section; thence by the section line South  $4\frac{1}{4}^{\circ}$  West 175.48 rods (2895.42 feet) to a run; thence by same North  $70^{\circ}$  West 42 poles (693.00 feet); thence South  $50^{\circ}$  West 31.5 poles (519.75 feet); thence North  $44^{\circ}$  West 20.8 poles (343.20 feet); thence South  $41^{\circ}$  West 17.7 poles (292.05 feet); South  $39\frac{1}{4}^{\circ}$  West 7.7 poles (127.05 feet); South  $63\frac{1}{4}^{\circ}$  West 7.5 poles (123.75 feet); South  $88\frac{1}{4}^{\circ}$  West 15.25 poles (251.63 feet); thence North  $88^{\circ}$  West 22.5 poles (371.25); South  $34\frac{1}{4}^{\circ}$  West 15.5 poles (255.75 feet); South  $40\frac{1}{4}^{\circ}$  West 10.4 poles (171.60 feet); thence North  $67^{\circ}$  West 6 poles (99.00 feet) to the quarter section line; thence by same North  $4\frac{1}{4}^{\circ}$  East 60 poles (990.00 feet) to the section center; thence by quarter line North  $85\frac{1}{4}^{\circ}$  West 13.4 poles (221.10 feet); thence North  $4\frac{1}{4}^{\circ}$  East 60 poles (990.00 feet); thence South  $85\frac{1}{4}^{\circ}$  East 148.4 poles (2448.60 feet) to a stone; thence North  $4\frac{1}{4}^{\circ}$  East 104 poles (1716.00 feet) to section line; thence by same South  $86^{\circ}$  East 27 poles (445.50 feet) to the beginning, containing 108.19 acres, more or less.

TOGETHER with the identical mining rights as set forth after Parcel No. 62.

PARCEL NO. 56 2-5-30

SITUATED in the Township of Wayne, County of Belmont and State of Ohio, being the Northeast corner of the Northeast quarter of Section 7, Township 6, Range 5, beginning for the same at a stone in the section line West of the Northeast corner of said section; and run South  $4\frac{1}{4}^{\circ}$  West 104.5 rods (1724.25 feet) to a stone; thence North  $85\frac{1}{4}^{\circ}$  West 135 rods (2227.50 feet) to a stone; thence North  $4\frac{1}{4}^{\circ}$  East 48.5 rods (800.25 feet) to a stake; thence South  $86^{\circ}$  East 64.5 rods (1064.25 feet) to a stake; thence North  $4\frac{1}{4}^{\circ}$  East 24 rods and 21 links (409.86 feet) to a stake; thence North  $4\frac{1}{4}^{\circ}$  East 15 rods and 16 links (258.06 feet) to a stake; thence North  $75\frac{1}{4}^{\circ}$  West 17 rods (280.50 feet) to a stake; thence North  $4\frac{1}{4}^{\circ}$  East 9 rods (148.50 feet) to a stake; thence South  $86^{\circ}$  East

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87.5 rods (1443.75 feet) to a stone, the place of beginning, containing 68.53 acres, more or less.

TOGETHER with the identical mining rights as set forth after Parcel No. 62.

PARCEL NO. 57

SITUATED in the Township of Wayne, County of Belmont and State of Ohio, being a part of the West half of the Northeast quarter of Section 7, Township 6, Range 5, and beginning for the same at a stake 27 rods and 16 links (486.60 feet) South of a stone (the Northwest corner of the Northeast quarter) and running South 86° East 64.5 rods (1064.25 feet) to a stake; thence South 4½° West 24 rods and 21 links (409.86 feet) to a stake; thence North 86° West 64.5 rods (1064.25 feet) to a stake; thence North 4½° East 24 rods and 21 links (409.86 feet) to place of beginning, containing 10 acres, more or less.

TOGETHER with the identical mining rights as set forth after Parcel No. 62.

PARCEL NO. 58

SITUATED in the Township of Wayne, County of Belmont and State of Ohio, being the Northwest corner of the Northeast quarter of Section 7, Township 6, Range 5, and beginning for the same at the Northwest corner (stone) of the Northeast quarter and running South 4½° West 27 rods and 16 links (456.06 feet) to a stake; thence South 86° East 64.5 rods (1064.25 feet) to a stake; thence North 4½° East 15 rods and 16 links (255.75 feet) to a stake; thence North 75½° West 17 rods (280.50 feet) to a stake; thence North 4½° East 9 rods (148.50 feet) to a stake; thence North 86° West 47.5 rods (783.75 feet) to the place of beginning, containing 10 acres, more or less.

TOGETHER with the identical mining rights as set forth after Parcel No. 62.

PARCEL NO. 59

SITUATED in the Township of Wayne, County of Belmont and State of Ohio, being a part of the Southwest quarter of Section 8, Township 6, Range 5, and beginning for the same at a stake in the quarter section line 40 rods north of the quarter corner between Section 7 and 8 and run North 85½° West 48.5 rods (800.25 feet) to a stone; thence North 4½° East 103 rods (1699.5 feet) to a stone; thence North 85½° West 32.5 rods (536.25 feet) to a stone; thence North 4½° East 61.6 rods (1016.40 feet) to a stake; thence South 85½° East 30.4 rods (501.60 feet) to a stake; thence South 4½° West 11 rods (181.50 feet) to a stake; thence South 85½° East 50.4 rods (831.60 feet) to a stake; thence South 4½° West 158 rods (2607.00 feet) to the place of beginning, containing 58.92 acres, more or less.

TOGETHER with all mining rights necessary and useful in mining and carrying away all of said coal. The same being the mining rights reserved in deed recorded in Volume 149, Page 152, of Belmont County Deed Records.

PARCEL NO. 60

SITUATED in the Township of Wayne, County of Belmont and State of Ohio, being a part of the West half of the Southwest quarter of Section 8, Township 6 and Range 5, also a part of the Southeast quarter of Section 14, Township 6, Range 5, beginning for the same at a stone at the Southwest corner of said Section 8, Township 6, Range 5, thence East 80 rods (1320.00 feet) to a stone; thence North 65 rods (1072.50 feet) to a stone; thence North 27½° West 107.84 rods (1779.36 feet) to a stone; thence

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West 31.09 rods (526.35 feet) to a stone; thence South 125.22 rods (2066.13') to a stone; thence West 22 rods (363.00 feet) to a stone; thence South 14° East 49.80 rods (821.70 feet) to a point in Section line between Sections 13 and 14; thence East with Section line 10 rods (165.00 feet) to a stone, the place of beginning, containing 70 acres, more or less.

EXCEPTING therefrom the following described tract: Beginning at a stone the Southeast corner of said Southeast quarter of Section 14; thence West along the South line of said Section 10 rods (165 feet) to a point; thence North 14° West 49.80 rods (821.70 feet) to a stone; thence East 22.00 rods (363.00 feet); thence South along the east line of said Section 14 to the place of beginning, containing 4.85 acres, more or less, and leaving in this parcel 65.15 acres, more or less.

TOGETHER with the identical mining rights as set forth after Parcel No. 62.

PARCEL NO. 61 2-5-35

SITUATED in the Township of Wayne, County of Belmont and State of Ohio, being the West half of the Northwest quarter of Section 7, Township 6, Range 5, and beginning for the same at a stone, the quarter corner between Sections 7 and 13 to a stake; thence North 5° East, 20 rods along the line between Sections 7 and 13 to a stake; thence still along said line N. 4-3/4° E. 143 rods (2359.50 feet) to a stone; thence South 85 1/4° East 81 rods (1336.50 feet) to a stone; thence South 4 1/4° West, 161 rods (2656.50 feet) to a stake; thence North 86° West, 81 rods (1336.50 feet) to a stone the place of beginning, containing 82 acres, more or less.

TOGETHER with the identical mining rights as set forth after Parcel No. 62.

PARCEL NO. 62

SITUATED in the Township of Wayne, County of Belmont and State of Ohio, being the West part of the Southwest quarter of Section 7, Township 6, Range 5 in the district of lands subject to sale at Marietta, Ohio, beginning for the same at the Southwest corner of said section; thence with the section line North 3° 35' East 40.25 chains (2656.50 feet) to a stone; thence with the quarter section line South 86° East 18 chains (1188 feet) to a stone; thence South 3 1/4° West 40.25 chains (2656.50 feet) to a stone in the Section line; thence with said Section line North 86 1/4° West 18.25 chains (1204.50 feet) to the place of beginning, containing 72.95 acres, more or less.

TOGETHER with the free and uninterrupted right of way into, upon and under the above described Parcels of land numbered from 52 to 62 both inclusive, at such points and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining and ventilating and carrying away said coal, hereby waiving all surface damages or damages of any sort arising therefrom or from the removal of all of said coal, together with the privilege of mining and removing through said described premises other coal belonging to the grantee, its successors and assigns, or which may be hereafter acquired by said grantee, its successors and assigns.

PARCEL NO. 63 2-5-37

ALL the coal of the No. 8 Pittsburgh or Wheeling vein only in and underlying the following described parcel of land: Situated in the Township of Wayne, County of Belmont and State of Ohio, being the East half of the Northwest quarter and a part of the Southwest Quarter of Section 7, Township 6, Range 5, and beginning for the same at a stone, the quarter corner between

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Sections 7 and 8 and run South  $4\frac{1}{2}^{\circ}$  West 100 rods (1650.00 feet) to a stone; thence North  $85\frac{1}{2}^{\circ}$  West 13.4 rods (221.10 feet) to a stone; thence South  $4\frac{1}{2}^{\circ}$  West 60 rods (990 feet) to a stone; thence South  $85\frac{1}{2}^{\circ}$  East 13.4 rods (221.10 feet) to a stone; thence South  $4\frac{1}{2}^{\circ}$  West 60 rods (990 feet) to a stake; thence North  $82\frac{3}{4}^{\circ}$  West 23 rods (379.50 feet) to a stake; thence North  $26^{\circ}$  West 67.8 rods (118.70 feet) to a stone; thence South  $85\frac{1}{2}^{\circ}$  East 7.6 rods (125.40 feet) to a stake; thence  $32\frac{1}{2}^{\circ}$  West 14 rods (231 feet) to a stake; thence North  $45^{\circ}$  West 25 rods (412.52 feet) to a stake; thence North  $60^{\circ}$  West 2.2 rods (36.38 feet) thence North  $4\frac{1}{2}^{\circ}$  East 132 rods (2178 feet) to a stone; thence South  $85\frac{1}{2}^{\circ}$  East 80 rods (1320 feet) to a stone; the place of beginning, containing 85.34 acres, more or less.

TOGETHER with the free and uninterrupted right of way into and under the above described Parcel at such points and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining, and ventilating and carrying away said coal, hereby waiving all surface damages or damages of any sort arising therefrom or from the removal of all of said coal, together with the privilege of mining and removing through said described premises other coal belonging to the grantee herein, its successors and assigns, or which may hereafter be acquired by said grantee, its successors and assigns.

PARCEL NO. 64

ALL the coal of the No. 8 Pittsburgh or Wheeling Vein only in and underlying the following described parcel: Situated in the Township of Wayne, County of Belmont and State of Ohio, being a part of the South half of Section 8, Township 6 and Range 5 and beginning for the same at the Southeast corner of Section 8 and run North  $85\frac{1}{2}^{\circ}$  West 241 rods (3976.50 feet) to a stone; thence North  $4\frac{1}{2}^{\circ}$  East 40 rods (660.00 feet) to a stone; thence South  $85\frac{1}{2}^{\circ}$  East 80 rods (1320.00 feet) to a stake; thence North  $4\frac{1}{2}^{\circ}$  East 123 rods (2029.50 feet) to a stone; thence South  $85\frac{1}{2}^{\circ}$  East 62.8 rods (1036.20 feet) to a stake; thence South  $4\frac{1}{2}^{\circ}$  East 20.64 rods (340.56 feet) to a stake; thence South  $34\frac{1}{2}^{\circ}$  East 92.32 rods (1523.28 feet) to a stake; thence South  $74^{\circ}$  West 56.88 rods (938.52 feet) to a stake; thence South  $64^{\circ}$  East 8 rods (132.00 feet) to a stake; thence South  $39^{\circ}$  East 20 rods (330 feet) to a stake; thence North  $46^{\circ}$  East 14 rods (231 feet) to a stake; thence South  $46\frac{1}{2}^{\circ}$  East 26 rods (429 feet) to a stake; thence South  $87^{\circ}$  East 37.04 rods (611.16 feet) to a stake; thence South  $4\frac{1}{2}^{\circ}$  West 20.5 rods (338.25 feet) to a stone; the place of beginning, containing 121.65 acres, more or less. Together with the free and uninterrupted right of way into and under the above described Parcel at such points and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining and ventilating and carrying away said coal, hereby waiving all surface damages or damages of any sort arising therefrom or from the removal of all of said coal, together with the privilege of mining and removal of all of said coal, together with the privilege of mining and removing through said premises other coal belonging to the grantee herein, its successors and assigns, or which may hereafter be acquired by said grantee, its successors and assigns.

PARCEL NO. 65

ALL the coal of the Pittsburgh Seam No. 8 only in and underlying the following described Parcel: Situated in the Township of Wayne, County of Belmont and State of Ohio, beginning at the Southwest corner of Section 9, Township 6, Range 5; thence South  $85\frac{1}{2}^{\circ}$  East 20 chains (1320 feet) to the Southeast corner of the West half of the Southwest quarter of said Section 9; thence North  $4\frac{1}{2}^{\circ}$  East 24 chains (1584 feet); thence North  $85\frac{1}{2}^{\circ}$  West, 20 chains (1320 feet) to the section line; thence along said section line South  $4\frac{1}{2}^{\circ}$  West, 19.11 chains (1261.26 feet); thence

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along said Section line South  $4\frac{1}{4}^{\circ}$  West, 4.89 chains (322.74 feet) to the place of beginning, containing 48.73 acres.

TOGETHER with the free and uninterrupted right of way into and under said Parcel at such points and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining, and ventilating and carrying away said coal, hereby waiving all surface damages or damages of any sort arising therefrom or from the removal of all of said coal, together with the privilege of mining and removing through said described premises other coal now owned or which may be hereafter acquired by said grantee, its successors and assigns.

BEING Parcel 3, Third Tract of the same coal and mining rights as conveyed by Hyman Finkelstein, Trustee of the Village of Powhatan, County of Belmont and State of Ohio, to Mon-Bel Coal Company by deed dated September 10, 1945 and recorded in Volume 354, Page 608, in the Records of Deeds, Belmont County, Ohio.

**PARCEL NO. 66 2-5-40**

ALL of the coal of the Pittsburgh Seam No. 8 only in and underlying the following described Parcels, Numbers 66 and 67:

SITUATED in the Township of Wayne, County of Belmont and State of Ohio and being a part of the Southwest quarter of Section 7, Township 6, Range 5, beginning for the same at a point on the North boundary of said quarter section 58 rods (957 feet) West of the center of said Section 7; thence with M. Thornberry's line South  $27^{\circ}$  East 17.25 chains (1138.50 feet) to a stake; thence South  $12^{\circ}$  East with G. W. Titlow's line 5.96 chains (393.36 feet) to a stake; thence South  $3\frac{1}{4}^{\circ}$  East 3.09 chains (203.94 feet); thence South  $11^{\circ}$  West 2.83 chains (186.78 feet); thence South  $27-3/4^{\circ}$  West 4.68 chains (308.88 feet); thence South  $3\frac{1}{4}^{\circ}$  West 9.64 chains (636.24 feet) to a stake in the Section line 23 rods and 16 links (390.06 feet) West from the Southeast corner of the Southwest quarter of said Section 7; thence North  $86\frac{1}{4}^{\circ}$  West 16.25 chains (1072.50 feet) to a stone; thence North  $3\frac{1}{4}^{\circ}$  East 40.25 chains (2656.50 feet) to the North boundary line of said quarter section; thence East 7.62 chains (502.92 feet) to the place of beginning, containing 60 acres, more or less.

TOGETHER with the free and uninterrupted right of way into and under said parcel of coal land at such points and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining, and ventilating and carrying away said coal, hereby waiving all surface damages or damages of any sort arising therefrom or from the removal of all of said coal, together with the privilege of mining and removing through said described premises other coal belonging now owned or which may be hereafter acquired by said grantee, its successors and assigns.

**PARCEL NO. 67 2-5-41**

SITUATED in the Township of Wayne, County of Belmont and State of Ohio, and known as and being a part of the East half of the Northwest quarter of Section 7, Township 6, Range 5 in the district of lands subject to sale at Marietta, Ohio and further described as follows:

BEGINNING for the same at the Southwest corner of said half quarter; thence North 29 rods (478.50 feet) to the highway; thence South  $64^{\circ}$  East 2.12 rods (34.98 feet); thence South  $49\frac{1}{4}^{\circ}$  East 25.68 rods (423.72 feet); thence South  $36-3/4^{\circ}$  East 14 rods (231 feet) to the South boundary of said quarter section; thence West 30.16 rods (497.64 feet) to the place of beginning, containing  $3-1/10$  acres, be the same more or less.

TOGETHER with the free and uninterrupted right of way into and under said last above described tract, at such points and in such

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manner as may be proper and necessary for the purpose of digging, mining, coking, draining, and ventilating and carrying away said coal, (herein conveyed to said grantee, its successors and assigns, all surface damages or damages of any sort arising therefrom or from the removal of all of said coal) together with the privilege of mining and removing through said described premises, other coal, now owned or hereafter acquired by said grantee, its successors or assigns, the same rights and privileges as are contained in said deed of said George W. Titlow to said Charles F. Randolph hereinbefore recited to use and occupy and purchase surface of the tract of land last above described at the price and on the terms, conditions, covenants, and agreements as are specified in said deed, are hereby assigned, transferred and set over to the grantee herein, its successors, and assigns.

THE foregoing Parcels number 52 to 67 inclusive, being the same premises as were conveyed by Hyman Finklestein, Trustee of the Village of Powhatan, County of Belmont, Ohio, to Mon-Bel Coal Company in the deed dated September 10, 1945 and recorded in Volume 354, Page 608 of the Records of Deeds, Belmont County, Ohio.

PARCEL NO. 68

BEING all the Pittsburgh No. 8 seam of coal in, upon and underlying the following described lands: Being a part of the Northwest quarter of Section 9, Tract 6 North, Range 5 West, Wayne Township, and beginning at the Northwest corner of said Section 9; thence along the North line of said Section South 86° 40' 20" East 358.41 feet to a point; thence leaving said Section line, South 38° 18' West 213.34 feet to a point; thence North 50° 09' 30" West 293.8 feet to the place of beginning, and containing 1.00 acres.

TOGETHER with the right to enter, mine and carry away said coal by means of main entries, passages and tunnels, and the right to transport coal through said main entries, passages and tunnels that may be mined from the lands of other parties. And being part of the same coal and mining rights as conveyed by The Ohio River and Western Coal Company to The Cambria Collieries Company in the Tenth Tract of Deed dated April 26, 1917 and recorded in Volume 211, Page 1, in the Records of Deeds, Belmont County, Ohio.

EXCEPTING from the coal in, upon and underlying the above described land any or all of the seams or veins of coal situate and lying below the No. 8 or Pittsburgh Vein of coal and any or all of the seams or veins of coal situate and lying above the No. 8 or Pittsburgh vein of coal reserved by Charles E. Powell and wife, in Tract 2 in deed to S. L. Mooney, dated May 11, 1901, which is recorded in Volume 131, Page 118, in the Record of Deeds, of Belmont County, Ohio.

PARCEL NO. 69

BEING all the Pittsburgh No. 8 seam of coal in, upon and underlying the following described lands: Being a part of the Northwest quarter of Section 9, Township 6 North, Range 5 West, Wayne Township and beginning at the Northeast corner of said Northwest quarter; thence South 3° 00' West, 1320.0 feet to a point; thence North 86° 42' West, 872.0 feet to a point; thence North 48° 27' West 339.5 feet to a point; thence North 30° 42' West, 239.7 feet to a point; thence North 5° 57' West, 223.0 feet to a point; thence North to the Northwest corner of the Northeast 40 acre tract; thence East 1314 feet, more or less, to the place of beginning and containing 38 acres, more or less.

TOGETHER with the right to enter, mine and carry away said coal by means of main entries, passages and tunnels and the right to



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PARCEL NO. 5 (1-8) - WASHINGTON TOWNSHIP

The undivided four-fifths (4/5) interest in the east half of the west half of the southwest quarter of Section thirty-three (33), Township Five (5), Range four (4), in the Marietta District, containing forty (40) acres, more or less;

Also all that part of the east half of said southwest quarter lying on the west side of Wildcat Run, the meanderings of said Wildcat Run are the boundaries, containing in said last mentioned tract thirty (30) acres, more or less, and containing in both tracts seventy (70) acres, more or less.

PARCEL NO. 6 (10) - WASHINGTON TOWNSHIP 2-13-10, 2-13-11, 2-13-12

Known as and being the southwest quarter of the southwest quarter of Section 14, Township 5, Range 4, in the District of Lands subject to sale at Marietta, Ohio, containing 40 acres, more or less.

Also the southeast quarter of the southeast quarter of Section 20, Township 5, Range 4, in the District of Lands subject to sale at Marietta, Ohio, containing 40 acres, more or less.

Also the southwest quarter of the southeast quarter of Section 20, Township 5, Range 4, in the District of Lands subject to sale at Marietta, Ohio, containing 40 acres, more or less.

Also the northeast quarter of the northeast quarter of Section 2-13-13 19, Township 5, Range 4, containing 39.95 acres, more or less.

PARCEL NO. 7 (12) - WAYNE TOWNSHIP 2-13-14

Known as and being the middle part of the southeast quarter of Section one (1), Township six (6), and Range five (5); beginning for the same at a stone in the quarter section line 38.72 rods east from the center of said section one; thence running with the quarter section line south 87½ degrees east 13.06 chains to a stake; thence south 2¼ degrees west 11.50 chains to a stake in the center of County Road; thence with said road North 74½ degrees east 7.70 chains to a stake; thence south 39¼ degrees east 6.15 chains to a stake in the center of the B. Z. & C. Railroad track; thence south 30¼ degrees west 1 chain; south 37-¾ degrees west 1 chain; south 40-¾ degrees west 4 chains; south 37 degrees west 2 chains; south 31¼ degrees west 1.50 chains; south 24¼ degrees west 6.50 chains to a stake in the center of the R. road; thence north 87-¾ degrees west 18.29 chains to the east side of orchard; thence north 63¼ degrees west 5.94 chains to the west side of orchard; thence north 58-¾ degrees west 4.38 chains to a locust tree, 6 inches in diameter; thence north 51 degrees east 1.54 chains to center of the County Road; thence with said road north 32 degrees east 1.80 chains; thence north 38 degrees east 5.59 chains; north 44 degrees east 2.27 chains; north 55½ degrees east 1.79 chains; north 38¼ degrees east 4.50 chains to a stake, witness R. oak 15 inches bearing north 4 degrees east distance 90¼ links; thence north 2¼ degrees east 9.22 chains to the place of beginning, containing sixty (60) acres, more or less.

PARCEL NO. 8 (13) - WAYNE TOWNSHIP

Known as and being the north end of the east half of the southeast quarter of Section Nine (9), Township Six (6), Range Five (5); beginning at the original quarter corner on the east boundary of said section, station 1; thence south seven minutes east 45.84 poles to station 2 in Long Run; thence up said Run with its meanderings south 74-¾ degrees west 12.7 poles to station 3; thence south 79¼ degrees west 33.3 poles to station 4; thence south 87¼ degrees west 18 poles to station 5; thence south 75 degrees west 17.8 poles to station 6 where the west boundary

beginning, containing forty-eight acres and ninety-nine perches, more or less, EXCEPTING therefrom the following described premises, to-wit: Situated in the Township of Washington, County of Belmont and State of Ohio, beginning for the same at the northwest corner of Section 20, Township 5, Range 4; thence south 23½ degrees east 22.91 rods; thence east 89.84 rods; thence north 20.98 rods; thence west 99 rods to the place of beginning, containing 12.38 acres, more or less.

PARCEL NO. 56 (67) - WAYNE TOWNSHIP

Known as and being the southwest quarter of the northwest quarter of Section Two (2), Township Six (6), and Range Five (5), containing Forty (40) Acres, more or less.

EXCEPTING therefrom the following described real estate: Beginning for said exception at the southwest corner of the northwest quarter of said Section 2, at a stone marked letter "J"; thence running east 45 rods to a run; thence up the run in a northwest direction 45 rods (Part of description omitted, see "Parcel 27 (34), Sixth Tract" supra, recorded in Volume 141, Page 260, Tract Six, which omission is not in deed from Thomas McGilton and wife to Peter M. Hitchcock and William D. Rees) to the place of beginning, containing 4½ acres, more or less; and containing after said exception 35½ acres, more or less.

PARCEL NO. 57 (68 AND 69) - WASHINGTON TOWNSHIP

THIS PARCEL IS INTENTIONALLY LEFT BLANK.

PARCEL NO. 58 (71) - WAYNE TOWNSHIP

First Tract 2-13-121

Beginning for the same at the southwest corner of Section One, Township Six and Range five; thence north with the section line, 72 perches to a stone, witness a white oak 15 inches south 45 degrees east 9 links, also white oak 16 inches south 89 degrees west 6 links; thence south 49½ degrees east 50 perches to a stone corner established by Charles DeHass, surveyor, for one Solomon Moore in 1845; thence east parallel with the section line 159.61 perches to a stone; thence south 40.20 perches to a post in the section line; thence west with the section line 198.18 perches to the place of beginning, containing Fifty-four acres, more or less, forty-four acres thereof being in the south part of the southwest quarter of said section one and ten acres thereof being in the southwest corner of the southeast quarter of said section.

PARCEL NO. 59 (74) - WASHINGTON TOWNSHIP

THIS PARCEL LEFT INTENTIONALLY BLANK.

PARCEL NO. 60 (77) - WAYNE TOWNSHIP

First Tract and Second Tract

FIRST AND SECOND TRACTS LEFT INTENTIONALLY BLANK.

Third Tract

Situated in the Township of Wayne, County of Belmont and State of Ohio, and being a part of the southeast quarter of the northwest quarter of Section 9, Township 6, Range 5, beginning for the same at the northwest corner of the southeast quarter of northwest quarter of said section. Running thence south 85½ degrees east 166 feet to a ravine; thence south 14-¾ degrees west 473 feet to a point in the middle of the public road; thence with said road south 67½ degrees west 78 feet; thence leaving said road running north 4½ degrees east 509.8 feet to the place of beginning, containing 1½ acres, more or less.

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district of lands formerly for sale at Marietta, Ohio, containing 20 acres, more or less, and being the same lands conveyed by Martha Kirkbride to Ebenezer Taylor by deed dated July 1, 1849, and recorded in Volume 33, at page 444.

Fourth Tract

Being a part of the southwest quarter of the southeast quarter of Section 32, Township 5, Range 4, together with a part of the northwest quarter of the northeast quarter of Section 31, Township 5, Range 4; beginning for the same at the northwest corner of said southwest quarter of the southeast quarter of Section 32; thence east with the north boundary of said quarter 42 poles to a corner on the east side of a small run; thence down said run to its junction, with a larger run, and to a large sand rock in a small drain near the top of the first bank on the south side of said larger run; thence on a straight to a White Oak tree on the east and west line dividing in the center the said northwest quarter of the northeast quarter of Section 31; thence west with said center line 68 poles to a corner on the west boundary of said last mentioned quarter of quarter; thence north 120 poles to the place of beginning; containing 40 acres more or less.

PARCEL NO. 62 (82) - WAYNE TOWNSHIP

PARCELS NO. 62 THROUGH 71 LEFT INTENTIONALLY BLANK.

Said tracts of coal hereinabove described under the headings "PARCEL NO. 1" to "PARCEL NO. 71", inclusive, being the same tracts of coal respectively described under the headings "PARCEL NO. 1", to "PARCEL NO. 71" inclusive, in the deed from The Cleveland Trust Company, Trustee under the Last Will and Testament of William D. Rees, deceased, to S. H. Robbins, dated July 1st, 1918, recorded in Volume 218, Page 2 et seq. of the Deed Records of Belmont County, Ohio; which tracts of coal are respectively referred to under the headings "PARCEL NO. 1" to "PARCEL NO. 71", inclusive, in said deed from The Cleveland Trust Company, Trustee, to S. H. Robbins, as having been conveyed to Peter M. Hitchcock and William D. Rees from the various grantors therein respectively named, by the various deeds therein respectively specified by date and by volume and page of record; to which deed from The Cleveland Trust Company, Trustee, to S. H. Robbins, and to each of which deeds from various grantors to Peter M. Hitchcock and William D. Rees, therein mentioned, reference is hereby made.

Together with all easements, options, rights and privileges described in, and granted by, said deed from The Cleveland Trust Company, Trustee, to S. H. Robbins, dated July 1st, 1918, under said headings, "PARCEL NO. 1" to "PARCEL NO. 71", inclusive, thereof, which easements, options, rights and privileges are therein defined as being those described in the respective deeds from the various grantors to Peter M. Hitchcock and William D. Rees, above referred to, and as being contained in said various deeds in form and language as follows:

"Together with the free and uninterrupted rights of way into, upon and under said described land, at such points, and in such manner as may be useful for the purpose of digging, draining and ventilating, and mining and removing said coal, together with the privilege of mining and removing through said described premises other coal belonging to said Grantees, their heirs and assigns, or which may hereafter be acquired, together with the right and privilege to make drains on the surface, and air holes, and change the same as the convenience of mining may require, together with all mining privileges on said surface or under it necessary for the removal of all of the Pittsburgh Vein underlying the same and neighboring properties now owned, or hereafter acquired by said Grantees, their heirs and assigns; and

said Grantees, their heirs and assigns, shall in no wise be liable for damages for failure to support the overlying surface, or for the sinking or falling in of said surface, or for destroying any spring or well of water, or for diverting any water flow or natural stream by reason of the removal of said coal or the exercise of any of the above mining privileges."

"It is expressly understood and agreed that the enumeration herein is in enlargement and not in restriction of the incidental rights accruing to said Grantees, by virtue of the within grant of coal and mining privileges."

"And together with the right to use and occupy such amount of surface of the above described land as may in the opinion of said Grantees, their heirs and assigns, from time to time, be useful for the purpose of mining said coal or exercising any rights incidental thereto, or that may be useful for the deposit of gob or refuse from said mines, or for carrying on the coal business and for the erection of buildings and machinery and tenant houses, and all other buildings needful or useful to carry on the coal business, or for the construction thereon of tracks, shafts, mine openings and other structures, and for the operation of railroads; and the said Grantors do, for themselves and their heirs, executors, administrators and assigns, covenant and agree that Grantors will upon demand and payment of, at the rate not exceeding One Hundred Dollars per acre, by the Grantees, their heirs and assigns, execute and deliver unto said Grantees, their heirs, and assigns, a good and sufficient deed of General Warranty, (and furnish therewith a complete Abstract of Title showing said lands to be free and clear of liens and encumbrances), conveying in fee simple, clear of liens and encumbrances, such amount of the above described land as Grantees in their opinion may require for the purposes herein next above set forth, And said Grantees agree to purchase the same at not exceeding said above stipulated price per acre."

"The Grantors reserve the rights to bore or dig through said vein of coal for oil or gas, but such boring or digging shall not interfere with the mining or removal of said coal."

It being expressly understood and agreed that the words "Grantor" or "Grantors", as used in the foregoing grant of rights and options, refer to the Grantors of Peter M. Hitchcock and William D. Rees, and not to The Cleveland Trust Company, Trustee, as Grantor in said deed to S. H. Robbins, or to said S. H. Robbins, as Grantor in former deed, and that in the execution and delivery of the former deed, said S. H. Robbins did assign and make over to The Cleveland Trust Company, as Grantee therein, only the interest which said S. H. Robbins had in such rights and options.

PARCEL NO. 72 (2) - WASHINGTON TOWNSHIP

Known as and being the northwest quarter of the northwest quarter of Section twenty-six (26) and the northeast quarter of the northeast quarter of Section thirty-two (32), in Township Five (5), of Range four (4), in the district of Marietta and State of Ohio, containing eighty acres, more or less.

Being the same tract of coal described under the heading "PARCEL NO. 72" in the deed from The Cleveland Trust Company, Trustee, to S. H. Robbins, dated July, 1918, recorded in Vol. 218, Page 2, et seq., of the Deed Records of Belmont County, Ohio; and being therein referred to as having been conveyed by Elizabeth Myers (unmarried) to Peter M. Hitchcock and William D. Rees, by deed dated April 9, 1903, and recorded in Vol. 145, Page 201 of the Deed Records of Belmont County, Ohio; to which deeds reference is hereby made.

TOGETHER with all easements, options, rights and privileges described in, and granted by, said deed from The Cleveland Trust

PARCEL NO. 75 (2-8) - WASHINGTON TOWNSHIP

Being the undivided one-fifth interest in the following described premises, to-wit:

Being all the No. 8 or Pittsburgh Vein of coal underlying the following premises, to-wit:

The east half of the west half of the southwest quarter of Section 33, Township 5, Range 4, containing 40 acres, more or less. Also all that part of the east half of said southwest quarter, situate and being on the west side of the Wildcat Run, the meanderings thereof to be the line, containing 30 acres, more or less.

Being the same tract of coal described under the heading "PARCEL NO. 75" in the deed from The Cleveland Trust Company, Trustee, to S. H. Robbins, dated July 1, 1918, recorded in Volume 218, Page 2, et seq., of the Deed Records of Belmont County, Ohio; and being therein referred to as having been conveyed by William S. Poulson, Guardian of Lyman B. Poulson, (a minor) to Peter M. Hitchcock and William D. Rees, by deed dated April 11, 1903, and recorded in Vol. 145, Page 14 of the Deed Records of Belmont County, Ohio; to which deeds reference is hereby made.

TOGETHER with all easements, options, rights and privileges described in, and granted by, said deed from The Cleveland Trust Company, Trustee, to S. H. Robbins, dated July 1, 1918, under said heading "PARCEL NO. 75" thereof (and under subsequent clauses thereof as to rights and options), which easements, options, rights and privileges are therein referred to as being contained in said above-mentioned deed from William S. Poulson, Guardian, to said Hitchcock and Rees, as follows:

"Together with the free and uninterrupted rights of way into and under said land, at such points and in such manner as may be proper and necessary for the purpose of digging, mining and carrying away said coal, together with the privilege of removing through said vein all of the Pittsburgh or No. 8 Vein of coal underlying said land and neighboring properties now owned or hereafter acquired by the purchasers, their heirs and assigns, without liability for damages to the surface arising from the removal of all of said coal, and the purchasers, their heirs and assigns, shall in no wise be liable for failure to support the overlying surface or for the sinking or falling in of said surface; together with the privilege of entering upon the surface of said lands for the purpose of ventilating the mines."

PARCEL NO. 76 (9) - WAYNE TOWNSHIP 2-13-160

Being the middle part of Section one (1), Township six (6), and Range five (5); beginning for the same at the center of the section; thence south  $2\frac{1}{4}$  degrees west 10 chains to a stone; thence north  $87\frac{1}{4}$  degrees west parallel with the quarter section line 39.90 chains to a stone in the section line; thence south  $2\frac{1}{4}$  degrees west 11.88 chains to a stone; thence south  $49\frac{1}{4}$  degrees east 12.58 chains to a stone set by surveyor DeHass in 1840, witness a White Oak 15 inches south 45 degrees east distance 9 links and a White Oak 16 inches south 89 degrees west distance 6 links; thence south  $87\frac{1}{4}$  degrees east 39.90 chains to a stone; thence south  $2\frac{1}{4}$  degrees west 10.05 chains to a stone in the section line; thence south  $87\frac{1}{4}$  degrees east 11.63 chains to the center of the B. Z. & C. R. R.; thence with said road north 23 degrees east 3.81 chains; north  $18\frac{1}{4}$  degrees east 5.21 chains; north  $24\frac{1}{4}$  degrees east 4.32 chains; north  $87\frac{3}{4}$  degrees west 18.29 chains to the east side of orchard; thence north  $63\frac{1}{4}$  degrees west 5.94 chains; thence north  $58\frac{3}{4}$  degrees west 4.38 chains to a Locust tree 6 inches; thence north 57 degrees east 1.54 chains to a stake in the county road; thence with said road north 32 degrees east 1.80 chains; north 36 degrees east 5.59

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chains north 44 degrees east 2.27 chains; north 55½ degrees east 1.79 chains; north 38½ degrees east 4.50 chains to a stake; witness a red oak 15; north 40 degrees east 90½ links; thence north 2½ degrees east 9.22 chains; north 87½ degrees west 9.68 chains to the place of beginning, containing 112 acres, more or less.

Being the same tract of coal described under the heading "PARCEL NO. 76" in the deed from The Cleveland Trust Company, Trustee, to S. H. Robbins, dated July 1, 1918, recorded in Vol. 218, Page 2, et seq., of the Deed Records of Belmont County, Ohio; and being therein referred to as having been conveyed by Margaret A. Moore, unmarried, to Peter M. Hitchcock and William D. Rees, by deed dated March 23, 1903, and recorded in Vol. 145, Page 12 of the Deed Records of Belmont County, Ohio; to which deeds reference is hereby made.

TOGETHER with all easements, options, rights and privileges described in, and granted by, said deed from The Cleveland Trust Company, Trustee, to S. H. Robbins, dated July 1, 1918, under said heading "PARCEL NO. 76" thereof (and under subsequent clauses thereof as to rights and options), which easements, options, rights and privileges are therein referred to as being contained in said above-mentioned deed from Margaret A. Moore to said Hitchcock and Rees, as follows:

"Together with the free and uninterrupted rights of way into, upon and under said land at such points and in such manner as may be proper for the purpose of digging, draining and ventilating, and mining and removing said coal, together with the right of mining and removing through said premises other coal belonging to said Grantees, their heirs and assigns, or which may be hereafter acquired, together with the right to make drains on the surface, and air holes, and change the same as the convenience of mining may require, together with all mining privileges on said surface, or under it, necessary for the removal of all said coal underlying the same and neighboring properties now owned or hereafter acquired by said Grantees, their heirs and assigns, and waiving and releasing said Grantees, their heirs and assigns, from all liability for damages for failure to support the overlying surface, or for sinking or falling in of such surface, or for destroying any spring or well of water, or for diverting any water flow or natural stream by reason of the removal of such coal or the exercise of any of the above mining privileges, together with all incidental rights that shall or may accrue to the said Grantees, their heirs and assigns, by virtue of the within grant of coal and mining privileges."

"And the said Grantor does for herself and her heirs, executors, administrators and assigns, covenant and agree that Grantor will upon demand and payment of at the rate of One Hundred Dollars per acre by the Grantees, their heirs and assigns, convey in fee simple unto the said Grantees, their heirs and assigns, such amount of said above described surface as may, in the opinion of said Grantees, their heirs and assigns, from time to time, be useful for the purpose of mining said coal or exercising any right incidental thereto, or that may be useful for the deposit of gob or refuse from said mines or for carrying on the coal business, or for the erection of necessary buildings and machinery and tenant houses, and all other buildings necessary to carry on the coal business, or for the construction thereon of tracks, shafts, mine openings and necessary structures, and for the operation of railroads."

"And said Grantees do for themselves, their heirs and assigns, agree to pay for such real estate as may be used for the above purpose herein next above set forth at the rate of \$100 per acre."

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"The Grantor reserves the right to operate through said coal for oil and gas."

PARCEL NO. 77 (11) - WASHINGTON TOWNSHIP

First Tract 2-13-161

The Northeast quarter of the northeast quarter of Section Twenty, Township Five, Range Four, in the District of Lands subject to sale at Marietta, Ohio, containing thirty-nine acres and fifty hundredths of an acre.

Second Tract 2-13-162

The northwest quarter of the northeast quarter of Section Twenty, Township Five, Range Four, in the District of Lands subject to sale at Marietta, Ohio, containing thirty-nine acres and fifty hundredths of an acre.

Third Tract 2-13-163

The southwest quarter of the northeast quarter of Section Twenty, Township Five, Range Four, in the District of Lands subject to sale at Marietta, Ohio, containing thirty-nine acres and fifty hundredths of an acre. The three tracts above conveyed contain, in all, one hundred and eighteen acres and fifty hundredths of an acre.

Being the same tracts of coal described under the heading "PARCEL NO. 77" in the deed from The Cleveland Trust Company, Trustee, to S. H. Robbins, dated July 1, 1918, recorded in Vol. 218, Page 2, et seq., of the Deed Records of Belmont County, Ohio; and being therein referred to as having been conveyed by Isaac Perkins and Florence O. Perkins, husband and wife, to Peter M. Hitchcock and William D. Rees, by deed dated February 12, 1903, and recorded in Vol. 143, Page 91 of the Deed Records of Belmont County, Ohio: to which deeds reference is hereby made.

TOGETHER with all easements, options, rights and privileges described in, and granted by, said deed from The Cleveland Trust Company, Trustee, to S. H. Robbins, dated July 1, 1918, under said heading "PARCEL NO. 77" thereof (and under subsequent clauses thereof as to rights and options,) which easements, options, rights and privileges are therein referred to as being contained in said above-mentioned deed from Elizabeth Myers to said Hitchcock and Rees, as follows:

"Together with the free and uninterrupted rights of way into, upon and under said land at such points and in such manner as may be proper for the purpose of digging, draining and ventilating, and mining and removing said coal, together with the right of mining and removing through said premises other coal belonging to said Grantees, their heirs and assigns, or which may be hereafter acquired, together with the right to make drains on the surface, and air holes, and change the same as the convenience of mining may require, together with all mining privileges on said surface, or under it, necessary for the removal of all said coal underlying the same and neighboring properties now owned or hereafter acquired by said Grantees, their heirs and assigns, and waiving and releasing said Grantees, their heirs and assigns, from all liability for damages for failure to support the overlying surface, or for sinking or falling in of such surface, or for destroying any spring or well of water, or for diverting any water flow or natural stream by reason of the removal of such coal or the exercise of any of the above mining privileges, together with all incidental rights that shall or may accrue to the said Grantees, their heirs and assigns, by virtue of the within grant of coal and mining privileges."



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right or option to purchase from the grantee, his heirs or assigns, so much of the surface as shall be necessary for the mining of said coal, at a price to be agreed upon at the time of the exercise of such option, but not to exceed the sum of Three Hundred Dollars (\$300.00), per acre, and said Grantee, by the acceptance of this deed, agrees for himself and his heirs and assigns, that, upon written notice of the exercise of this option and tender of payment therefor, he, his heirs or assigns, will deliver within thirty days a good and sufficient deed of general warranty therefor, free and clear from all encumbrances.

IT BEING THE INTENTION OF THE GRANTORS HEREIN TO CONVEY TO THE GRANTEE, ALL THEIR RIGHT, TITLE, AND INTEREST IN SAID NUMBER EIGHT OR PITTSBURGH VEIN OF COAL, in and underlying the hereinbefore described premises, together with all and singular the mining rights thereto as reserved in the deed from T.C. Potts, et al., to O.A. Jones, dated December 3, 1949, and recorded in Belmont County Record of Deeds, in Volume 385, page 490.

Said premises being those conveyed in a Certificate of Transfer of Real Estate dated April 20, 1957, and recorded in Volume 437, page 26, Belmont County Record of Deeds, in which the interest of T.C. Potts, was conveyed to Baulah M. Wilson and Zella M. Potts. (The last transfer affecting these premises).

and all the estate, title, and interest of said grantors in and to said premises.

TO HAVE AND TO HOLD the same, with all the rights, easements, and appurtenances thereunto belonging, and all the rents, issues, and profits thereof, to the said grantee, its successors and assigns forever, subject, however, to all legal highways and to the conditions herein contained.

PRIOR DEED REFERENCE: Volume 417, Page 336, Belmont County Deed Records.

PARTS 56 THROUGH 62

PARTS 56 THROUGH 62 INTENTIONALLY LEFT BLANK.

PART 63

The Pittsburgh No. 8 coal with the mining rights in and under the following fourteen (14) tracts, all of which are in Wayne Township, Belmont County, Ohio and bounded and described as follows:

2-63-1

FIRST TRACT: Being a part of Section 7, Township 6 and Range 5, and bounded and described as follows:

Beginning at the S.E. Corner of the Section; thence W. with the section line 126 4/5 rods to a point on the section line; thence N. 44 1/2 rods to a stone; thence W. 57 19/25 rods to the middle of the road; thence by same N. 24° E. 11 2/5 rods; thence N. 12° E. 7 rods to a stone; thence leaving the road N. 85 1/2° E. 179 rods to the E. section line; thence by same S. 75 2/5 rods to the place of beginning, containing 61.82 acres.

2-63-14

SECOND TRACT: Being a part of the S. half of Section 7 and bounded and described as follows:

Beginning at the S.W. corner of the S.E. quarter; thence with the section line S. 85 1/2° E. 35.8 rods; thence N. 4 1/2° E. 44.44 rods; thence N. 85 1/2° W. 35.8 rods to a stone on the quarter section line; thence S. 5 1/2° W. 23 rods to a stone; thence S. 13° W. 20.5 rods to a stake by the road on the Township line; thence by same

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S. 85½° E. 4 rods to the place of beginning, containing 10.4 acres, more or less.

In connection with the above described Tracts 1 and 2 inclusive, there is also conveyed to the grantees, their successors and assigns, the following mining rights which were conveyed at the time the coal was first severed from the surface:

Together with the free and uninterrupted right of way into, upon and under said land, at such points, and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining and ventilating, and carrying away said coal, hereby waiving all surface damages or damages of any sort arising therefrom, or from the removal of all of said coal, together with the privilege of mining and removing through said described premises other coal belonging to the grantees, their heirs and assigns, or which may hereafter be acquired by said grantees, their heirs and assigns.

Said grantors, for, themselves and their heirs and assigns, reserve the right to drill and operate through said coal for oil and gas.

The grantees, their heirs and assigns, upon payment of \$100.00 per acre to the heirs and assigns of the original grantors of said coal lands, shall have the right to use surface land on Tracts 1 and 2.

Being a part of the same coal, coal lands, mining rights and privileges as described in a Certificate of Transfer in the Estate of T.J. Huffman, deceased, dated April 8, 1946, and recorded in Volume 353, at Page 271, Belmont County Deed Records, and also the Deed from Inez H. Parkinson, et al., dated March 30, 1946, and recorded in Volume 351, Page 100, Belmont County Deed Records.

PRIOR DEED REFERENCE: Volume 514, Page 72, Belmont County Deed Records.

PART 64

The Pittsburgh or No. 8 coal with the mining rights in and underlying the following described property.

Situated in the Township of Wayne, County of Belmont and State of Ohio and being a part of the southwest quarter of Section 8; Township 6, Range 5, beginning at a stone on the east line of the west half of the southwest quarter of said Section 8, which bears from the southwest corner of said Section 8, and with the south line of same, east 1320.00 feet to a stone, at the southeast corner of the west half of the southwest quarter of said section 8; thence leaving the south line of said Section 8, and with the east line of the west half of the southwest quarter of said Section, north 4° 30' east 660.00 feet to the stone at the beginning point; thence leaving the east line of the west half of the southwest quarter of said Section, south 85° 30' east 519.75 feet to a point; thence north 4° 30' east 1699.50 feet to a point; thence north 85° 30' west 536.24 feet to a point; thence north 85° 30' west 653.47 feet to a point; thence south 23° 00' east 1450.93 feet to a point on the east line of the west half of the southwest quarter of said Section 8; thence with the east line of the west half of the southwest quarter of said Section 8, south 4° 30' west 412.50 feet to the beginning containing 30.1754 acres, more or less, but excepting therefrom the following:

Beginning at the stone located at the beginning point for the above 30.1754 acre tract, on the east line of the west half of the southwest quarter of said Section 8; thence north 39° 14' east, 396.50 feet to a point; thence north 36° 09' west 346.50 feet to a point on the east line of the west half of the

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LIMITED WARRANTY DEED

KNOW ALL MEN BY THESE PRESENTS: THAT, WYOMING POCAHONTAS LAND CO., (fka Youghiogheny and Ohio Coal Company) an Ohio corporation, with office at 39 Robin Place, Beckley, WV 25801, hereinafter called "GRANTOR", in consideration of the sum of Ten Dollars (\$10) and other valuable considerations to it paid by Consolidated Land Company, an Ohio corporation, whose tax mailing address is Box 505, 34208 Aurora Road, Solon, Ohio 44139, hereinafter called "GRANTEE", the receipt and sufficiency of which are hereby acknowledged, does hereby GRANT, BARGAIN, SELL AND CONVEY with limited warranty covenants, to the Grantee, its successors and assigns, all of the remaining coal contained in or underlying the tracts of land more particularly described on Exhibit "A", attached hereto and made a part hereof.

TOGETHER with such mining rights and other rights and privileges pertinent to the tracts set forth on Exhibit "A".

(HEREINAFTER CALLED THE "Premises").

The Grantor makes no guarantee or warranty with respect to the quality or quantity of coal remaining in said premises herein conveyed and Grantee accepts said premises known as the Allison Mine in its present condition and circumstance.

TO HAVE AND TO HOLD such premises, unto the said Grantee, its successors and assigns, forever, EXCEPT AND SUBJECT as hereinbefore provided, and expressly SUBJECT to all legal highways, exceptions, reservations, conditions, servitudes, easements, rights, limitations and restriction shown by instrument of record.

AND the said Grantor hereby covenants with the said Grantee that said premises are free and clear from all encumbrances by, from or through the said Grantor, and except and subject as hereinbefore provided, and that the Grantor will warrant and defend the same to the Grantee, only as against the lawful claims

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and demands of all persons claiming by, through or under the said Grantor herein, but against none other.

All of the aforescribed Parcels are conveyed SUBJECT TO:

(1) All matters of record as of the 1st day of March, 1995, said matters of record include but are not limited to the provisions contained in the description hereinbefore set forth and the provisions contained in all prior conveyances of record;

(2) All liens for nondelinquent real property taxes and assessments;

IT is the intent of the Grantor herein to convey to the Grantee, its successors and assigns all of the Pittsburgh No. 8 coal and mining rights appurtenant thereto, situated in Sections 30 and 36 Township 4, Range 4, and Sections 6 and 12, Township 5, Range 5, Sunbury Township, Monroe County, Ohio, of which the Grantor is seized at the date hereof.

IN WITNESS WHEREOF, Grantor has caused its name to be hereunto subscribed by its duly authorized officers, this 24th day of February, 1995.

Signed and acknowledged  
in the presence of:

Rama Blevins  
Rama Blevins

David Dove  
David Dove

Denise Y. Stewart  
Denise Y. Stewart

Karen Joseph  
Karen Joseph

[NOTE: TYPE OR PRINT NAME OF  
WITNESSES UNDER EACH SIGNATURE]

WYOMING POCAHONTAS LAND CO.,  
an Ohio Corporation

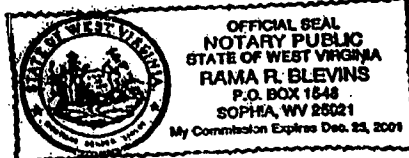
By Hubert Payne  
Hubert Payne  
Its President

By Lauren Slone  
Lauren Slone  
Its Secretary

STATE OF West Virginia,  
COUNTY OF Raleigh, SS:

On this the 24th day of February, 1995, before me, the undersigned Notary Public, personally appeared Hubert Payne, who acknowledged himself to be President of Wyoming Pocahontas Land Co., an Ohio corporation, and that as such officer being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation as President.

IN WITNESS WHEREOF, I hereunto set my hand and Notarial seal.



Notary Public  
My Commission Expires: Dec 23, 2001

ADDENDUM TO RIGHT-OF-ENTRY AFFIDAVIT, AMERICAN ENERGY CORP.

STATE OF Kentucky,  
COUNTY OF Wayd, SS:

On this the 2nd day of March, 1995, before me, the undersigned Notary Public, personally appeared Lauren Slo.e, who acknowledged herself to be Secretary of Wyoming Pocahontas Land Co., an Ohio corporation, and that as such officer being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation as Secretary.

IN WITNESS WHEREOF, I hereunto set my hand and Notarial seal.

Denise V. Stewart  
Notary Public

My Commission Expires: March 3, 1997

This Instrument Prepared By:  
HANLON, DUFF, PALEUDIS & ESTADT CO., LPA  
46457 National Road West  
St. Clairsville, OH 43950

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AEC 09914

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EXHIBIT A

TRACT NO. 1

Parcel No.1 2-1-1, 2-2-1

The undivided one-half of all the stone coal contained in the vein commonly known as the Pittsburgh Vein, and geologically known as Seam No. 8, in and underlying the following tract or parcel of land, situated in the County of Monroe, Sunbury Township, and State of Ohio, and bounded as follows:

Beginning for the same at the northwest corner of the northwest quarter of section six, township five and range five of the lands sold at the land office at Marietta and running thence east 164 perches to a stake; thence south 58 perches to a stake and stone; thence west 164 perches to a stake, thence north 58 perches to the place of beginning, EXCEPTING nine acres thereof sold to Samuel Starr off the east end of said tract, containing fifty acres, more or less.

The above excepted nine acres are described as follows: Beginning for the same at the northeast corner of the northwest quarter of section six, township 5, range 5, and running thence south 58 perches to a post; thence west 29  $\frac{8}{10}$  perches to a post, thence north nine degrees and thirty minutes east 58  $\frac{2}{10}$  perches to a stake; thence east 20 perches to the place of beginning and being the same nine acre tract of land conveyed by Solomon Moore to Samuel Starr.

Being the same tract of coal described in the deed from The Cleveland Trust Company, Trustee, under the last Will and Testament of William D. Rees, deceased, to S. H. Robbins, dated July 1st, 1918, recorded in Volume 86, pages 418 to 420 inclusive of the Deed records of Monroe County, Ohio, to which deed reference is hereby made.

TOGETHER with all easements, options, rights and privileges described in, and granted by said deed from The Cleveland Trust Company, Trustee, to S. H. Robbins, dated July 1, 1918, which easements, options rights and privileges are therein referred to as being contained in the deed from Gordon Pugh (unmarried) to Peter M. Hitchcock, and William D. Rees, dated July 3, 1903, recorded in Volume 62, pages 273 to 275 inclusive of the Deed Records of Monroe County, Ohio to which deed reference is hereby made in form and language as follows:

"Together with the free and uninterrupted rights of way into, upon and under said described land, at such points, and in such manner as may be useful for the purpose of digging, draining and ventilating, and mining and removing said coal, together with the privilege of mining and removing through said described premises, other coal belonging to said grantees, their heirs and assigns, or which may be hereafter acquired, together with the right and privilege to make drains on the surface, and air holes, and change the same as the convenience of mining may require, together with all mining privileges on said surface or under it necessary for the removal of all of the Pittsburgh Vein underlying the same and neighboring properties now owned, or hereafter acquired by said Grantees, their heirs and assigns, and said Grantees, their heirs and assigns, shall in no wise be liable for damages for failure to support the overlying surface, or for the sinking or falling in of said surface, or for destroying any spring or well of water or for diverting any water

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flow or natural stream by reason of the removal of said coal or the exercise of any of the above mining privileges.

"It is expressly understood and agreed that the enumeration herein is in enlargement and not in restriction of the incidental rights accruing to said Grantees, by virtue of the within grant of coal and mining privileges.

"And together with the right to use and occupy such amount of surface of the above described land as may in the opinion of said Grantees, their heirs and assigns, from time to time, be useful for the purpose of mining said coal or exercising any rights incidental thereto, or that may be useful for the deposit of gob or refuse from said mines, or for carrying on the coal business and for the erection of buildings and machinery and tenant houses, and all other buildings needful or useful to carry on the coal business, or for the construction thereon of tracks, shafts, mine openings and other structures, and for the operation of railroads, and the said Grantors, do for themselves and their heirs, executors, administrators and assigns, covenant and agree that Grantors will upon demand and payment of, at the rate not exceeding one hundred dollars per acre, by the Grantees, their heirs and assigns, execute and deliver unto said Grantees, their heirs and assigns, a good and sufficient deed of General Warranty (and furnish therewith a complete Abstract of title showing said lands to be free and clear of liens and encumbrances) conveying in fee simple, clear of liens, and encumbrances, such amount of the above described land as Grantees, in their opinion may require for the purposes herein next above set forth. And said Grantees agree to purchase the same at not exceeding said above stipulated price per acre.

"The Grantors reserve the rights to bore or dig through said vein of coal for oil or gas, but such boring or digging shall not interfere with the mining or removal of said coal."

It being expressly understood and agreed that the words "Grantor", or "Grantors" as used in the foregoing grant of rights and options under the heading "Parcel 1" hereof, refer to the grantors of Peter M. Hitchcock and William D. Rees, and not to The Cleveland Trust Company, Trustee, as Grantor in said deed to S. H. Robbins, or to S. H. Robbins, as Grantors, or successor grantors in previous deeds or in this deed, and that in the execution and delivery of this deed said Wyoming Pocahontas Land Co. is assigning and making over to the Grantee herein, only the interest which said Wyoming Pocahontas Land Co. has in such rights and options.

Prior Deed Reference: Volume 115, Page 537 of the  
Monroe County Deed Records

Parcel No. 2

First Tract

Situated in the Township of Sunbury, County of Monroe, and State of Ohio, to wit: All the coal commonly known as the Pittsburgh Vein and geologically known as Seam Number Eight (8) in and under the following described tract of land: Situated in Sunbury Township, Monroe County, Ohio and being the South West quarter of section thirty-six (36) in township four (4) of range four (4) in the District of Lands formerly subject to sale at Marietta, Ohio, containing one hundred and forty four acres and forty hundredths of an acre (144.40) be the same more or less but subject to all legal highways.



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**Tract No. 1:** Known as a part of the Danford farm, beginning for the same at a point 32 perches East of the Northwest corner of the Southeast quarter of Section 6, Township 5, Range 5, and corner of Thomas Fletcher's 8-acre lot; heretofore purchased out of said quarter; thence South with his line 14 1/2 perches to a stone in the road and corner to A.P. Danford's tract; thence Easterly with the meanders of the road 45 perches to a stone on the East side of the road; thence East 29 perches to stone; thence South 4 degrees, West 148 perches and 10 links to the section line; thence East with the Section line 64 perches to the Southeast corner of said quarter; thence North with the Section line 158 perches to the quarter post; thence West with the quarter line 129 perches to the place of beginning, containing 68 acres, more or less.

**Tract No. 2:** Known as a part of the West half of the Northeast quarter of Section 6, Township 5, Range 5, commencing for the same 32 rods East from the Southwest corner of said West half of aforesaid Northeast quarter of aforesaid Section 6; thence East 52 rods to the East line of said West half; thence North with said half quarter line 30 rods; thence West 52 rods to intersect the line of T.W. Fletcher; thence South with the line of T.W. Fletcher 30 rods to the place of beginning, containing 9-3/4 acres.

**Tract No. 3:** Being a part of the West half of the Northeast quarter of Section 6, Township 5, Range 5, beginning for the same at a point 30 rods North of the Southeast corner of the aforesaid West half of the Northeast quarter of aforesaid Section; thence North with said half quarter line 30 rods; thence West 52 rods; thence South 30 rods; thence East 52 rods to the place of beginning, containing 9-3/4 acres, in all, 87 1/2 acres, more or less.

Together with the free and uninterrupted right of way under, into and upon said land, at such points, and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining and ventilating and carrying away said coal, etc. (hereby waiving all surface damages or damages of any sort arising therefrom or from the removal of said coal), together with the privilege of mining and removing through said described premises other coal belonging to the grantee, his heirs and assigns, or which may be acquired by said grantee, his heirs and assigns. Said grantor, for himself and his heirs and assigns, reserve the right to drill and operate through said coal for oil and gas. It is understood and agreed between the parties hereto that the said grantor, and his heirs, shall be paid at the rate of \$100.00 per acre for all surface land taken and used for mining said coal by said grantee, his heirs and assigns.

Being the same coal and mining rights conveyed to J.J. Phillips by Robert L. Cleary and Mary M. Cleary by deed dated November 10, 1903, and recorded in Volume 67, Page 74, Record of Deeds, Monroe County, Ohio.

**Parcel No. 4** 2-3-6

All the No. 8 or Pittsburgh vein or seam of coal within and underlying the following described premises, situated in the Township of Sunbury, County of Monroe and State of Ohio, and described as follows, to wit: Lot 15 in Section 6, Township 5, Range 5, containing 57.34 acres, more or less, and particularly described as follows: Beginning for the same at a stake and stone 58 poles due south of the Northeast corner of the Northwest

ADDENDUM TO RIGHT-OF-ENTRY AFFIDAVIT, AMERICAN ENERGY CORP.

quarter of Section 6; thence West 80.80 poles to a stone; thence South 99 poles to a stone; thence East 80 poles to a stone; thence North 99 poles to the place of beginning, containing 50 acres, more or less. Excepting therefrom 3.41 acres described as follows: Beginning for the same 80 poles West of the Southeast corner of the Northwest quarter of Section 6; thence 59 poles to a stake; thence East 3.5 poles to a stake; thence South 11 degrees, East 60 poles, thence West 15 poles to the place of beginning: Also the following tract of land beginning for the same 80 poles West of a stake set South 58 poles from the northeast corner of the Northwest Quarter of Section 6, Township 5, Range 5; thence West 40 poles to a stake; thence South 40 poles to a stake; thence East 40 poles to a stake; thence North 40 poles to the place of beginning, containing 10 acres, more or less. Also the following tract of land: Beginning for the same 54 poles South of the Northeast corner of the Northwest quarter of Section 6, Township 5, Range 5; thence South 4 poles to a post; thence West 29.8 poles to a post; thence North 9 degrees, East 4 poles to a stone; thence East 29.8 poles to the place of beginning, containing 119 rods, be the same, more or less.

Together with the free and uninterrupted right of way under, into and upon said land, at such points and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining and ventilating and carrying away said coal, etc. (hereby waiving all surface damages or damages of any sort arising therefrom or from the removal of all of said coal), together with the privilege of mining and removing through said described premises other coal belonging to the grantee, his heirs and assigns, or which may hereafter be acquired by said grantee, his heirs and assigns. Said grantor, for himself and his heirs and assigns, reserves the right to drill and operate through said coal for oil and gas. It is understood and agreed between the parties hereto, that the said grantor, and his heirs, shall be paid at the rate of \$100.00 per acre for all surface land taken and used for mining said coal by said grantee, his heirs or assigns.

Being the same coal and mining rights conveyed to J.J. Phillips by I.N. Jeffers and Louise Jeffers, by deed dated November 9, 1903, and recorded in Volume 66, Page 143, Records of Deeds, Monroe County, Ohio.

Parcel No. 5

All the No. 8 or Pittsburgh vein or seam of coal within and underlying the following described premises, situated in the Township of Sunbury, County of Monroe and State of Ohio:

First Tract: Being the Northeast part of the Southwest quarter of Section 6, Township 5, Range 5, beginning for the same at the center of Section 6; thence North 88-1/2 degrees, West 16.30 chains; thence South 33 degrees, West 9.50 chains; thence South 2 degrees, West 7.05 chains; thence South 88-1/2 degrees, East 21.36 chains; thence North 2 degrees, East 15.17 chains to the place of beginning, containing 30 acres.

Second Tract: Commencing for the same at the Southwest corner of the Northeast quarter of Section 6, Township 5, Range 5, thence North 30 rods; thence East 32 rods; thence South 30 rods; thence West 32 rods to the place of beginning, CONTAINING 6 acres.

Third Tract: Being a part of the Southeast quarter of Section 6, Township 5, Range 5, beginning for the same at the Northwest

ADDENDUM TO RIGHT-OF-ENTRY AFFIDAVIT, AMERICAN ENERGY CORP.

may be hereafter acquired by said grantee, his heirs and assigns. The grantor, his heirs and assigns, reserves the right to drill for oil and gas on said premises with all rights and privileges thereof or for any other purpose except what rights and privileges are herein specifically granted and no surface land is to be taken in the operation of coal under or through this land except what may hereafter be granted by Susannah Gratigny, her heirs or assigns, at such price as may be then agreed upon.

BEING the same coal and mining rights conveyed to J.J. Phillips by Susannah Gratigny by deed dated March 1, 1904, and recorded in Volume 66, Page 273, Records of Deeds, Monroe County, Ohio.

Parcel No. 15    2-3-19

All the No. 8 or Pittsburgh vein or seam of coal within and underlying the following described premises, situated in the County of Monroe, and State of Ohio: The west half of the Northeast quarter of Section 12, Township 5, Range 5, in the District of lands subject to sale at Marietta, Ohio, containing 80.34 acres; excepting therefrom the North half of the West half of the Northeast quarter of said Section 12, Township 5, Range 5, containing 40.17 acres, Also a part of the East half of the Northeast quarter of Section 12, Township 5, Range 5, containing 60.34 acres. Also a part of the East half of the Northeast quarter of Section 12, Township 5, Range 5, beginning for the same at the Southwest corner of said half quarter; running from thence North 80 perches; thence East 40 perches; thence South 80 perches; thence West 40 perches to the place of beginning, containing 20 acres. In all, 120.51 acres, more or less. The above premises being all of the Northeast quarter of Section 12, Township 5, Range 5, except the Northwest quarter thereof.

TOGETHER with the free and uninterrupted right of way under, into and upon said land, at such points and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining and ventilating and carrying away said coal, etc. (hereby waiving all surface damages or damages of any sort arising therefrom or from the removal of said coal), together with the privilege of mining and removing through said described premises other coal belonging to the grantee, his heirs and assigns. Said grantor, for himself and his heirs and assigns, reserves the right to drill and operate through said coal for oil and gas. It is understood and agreed between the parties hereto that the said grantor and his heirs shall be paid at the rate of \$100.00 per acre for all surface land taken and used for mining said coal by said grantee, his heirs, and assigns.

BEING the same coal and mining rights conveyed to J.J. Phillips by William A. Tracy, by deed dated November 9, 1903, and recorded in Volume 65, Page 624, Record of Deeds, Monroe County, Ohio.

Parcel No. 16    2-3-20

All of the No. 8 or Pittsburgh vein or seam of coal within and underlying the following described premises, situated in the Township of Sunbury, County of Monroe and State of Ohio, and known as being a certain tract of land bounded and described as follows: Being the North half of the West half of the Northeast quarter of Section 12, Township 5, Range 5, containing 40.17 acres, more or less.

TOGETHER with the free and uninterrupted right of way under, into and upon said land, at such points and in such manner as may be

**ADDENDUM TO RIGHT-OF-ENTRY AFFIDAVIT, AMERICAN ENERGY CORP.**

and bounded and described as follows: Being the West half of the Southwest quarter of Section 12, Township 5 and Range 5, containing 80 acres.

TOGETHER with the Free and uninterrupted right of way, into, upon and under said land at such points and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining and ventilating and carrying away said coal, etc. (hereby waiving all surface damages and damages of any sort arising therefrom, or from the removal of all of said coal) together with the privilege of mining and removing through, upon and over said described premises, other coal belonging to said grantee, his heirs and assigns, or which may hereafter be acquired. The grantors reserve for themselves, their heirs and assigns, the right to drill through said coal for oil, gas and all other minerals.

BEING Tract Five in the conveyance from Jessie R. Savage to the Monbel Company, recorded April 23, 1947 in Volume 120, Page 72, Records of Deeds, Monroe County, Ohio.

**Parcel No. 19 2-3-23**

BEING the Pittsburgh No. 8 coal with the mining rights of record in and under the following described real estate: Situated in the Township of Sunbury, County of Monroe, and State of Ohio, and known as and being the Northwest quarter of Section 12, Township 5, Range 5, containing 160.68 acres, more or less.

TOGETHER with the free and uninterrupted use and enjoyment of the right of way into and under said tract of land at such points and in such manner as may be considered proper and necessary for the advantageous and economical operation of, and in the digging, mining and carrying away said coal and without liability therefore, and hereby waiving any and all damages that might or could arise therefrom by reason of such digging, mining and carrying away of said coal, together with the privilege of carrying, transferring and removing through said described premises said coal and other coal now owned or hereafter acquired by said grantee, its successors and assigns, and generally freed, clear and discharged of any servitude whatever to the overlying land or anything therein or thereon.

BEING Tract Three in the conveyance from the Captina Creek Coal Company to The Monbel Company, recorded April 17, 1947, in Volume 120, Page 43, of the Monroe County, Ohio, Records of Deeds.

**Parcel No. 20 2-3-24**

BEING the Pittsburgh No. 8 coal with the mining rights of record in and underlying the tract in Sunbury Township, Monroe County, Ohio, and known as and being the East half of the Southwest quarter of Section 12, Township 5, Range 5, containing 80.34 acres, more or less.

BEING one of the tracts conveyed by John and Samuel Seger to George E. Rice, et al., by deed dated September 6, 1906, and recorded in Vol. 67, Page 391 of the Monroe County records of deeds and conveyed by Edgar Hall, Auditor of Monroe County to Roy W. Fox by deed dated August 8, 1944, and recorded in Vol. 116, Page 152, of said deed records and being that part of said deed designated as coal lands formerly owned by George E. Rice, et al., in Section 12, Township 5, Range 5, of Sunbury Township, Monroe County, Ohio.

ADDENDUM TO RIGHT-OF-ENTRY AFFIDAVIT, AMERICAN ENERGY CORP.

It is hereby agreed that said grantee, his heirs and assigns, shall have the right to mine and carry away all of said coal, and with the mining rights and privileges necessary or convenient to such mining or removal of same, without being required to provide for the support of the overlying strata and without liability to the said surface or anything therein or thereon by reason of the mining or removal of said coal, or the manufacture of the same or other coal into coke or other products, at such places as may be selected by said grantee, his heirs or assigns. Together with the right of mining and removing under said described premises other coal or matter belonging to, or that may hereafter belong to said grantee, his heirs or assigns. And with the right to said grantee, his heirs and assigns, to purchase at any time, any number of acres of the surface of said land, by paying therefor at the rate of One Hundred Dollars (\$100.00) per acre; upon which payment the owners of the land under which the coal is hereby conveyed, their heirs and assigns, shall execute and deliver to the said grantee, his heirs and assigns, a deed therefor, in fee simple, free of all encumbrances. But it is understood and agreed between the parties hereto that the owner of said land, or lessees, shall have the right to drill for oil and gas through said coal providing that such drilling shall not in any manner interfere with the mining of said coal.

BEING Tract One conveyed by Roy W. Fox and Rose Fox, his wife, and F. A. McFarland and May McFarland, his wife, of Shadyside, Belmont County, Ohio, to the Monbel Company by deed dated day of October, 1948, and recorded in Volume 122, Page 172, Records of Deeds, Monroe County, Ohio.

Parcel No. 21      2-3-25

BEING all the Pittsburgh No. 8 coal in and under the following described tract, with the mining rights as reserved by Margaret C. Egger, et al, in their deed recorded in Vol. 92, Page 500, Deed of Records, Monroe County, Ohio.

BEING a part of the North half of Section No. 6, Township 5, Range 5, Sunbury Township, Monroe County, Ohio, and bounded and described as follows: Beginning for the same at the quarter post on the north side of said Section; thence along the north section line, east 80 rods; thence south 100 rods; thence west 52 rods; thence south 30 rods; thence west 32 rods to the quarter section line; thence by same north 72 rods to a point at the southeast corner of a nine acre tract; thence west 29.8 rods to a stone; thence North 9 degrees 30' East 58.2 rods to the north section line; thence by same, east 20 rods to the place of beginning, containing 63.5 acres, more or less.

ALL oil and gas in and underlying said described premises is excepted and reserved, with all rights and privileges on the surface of the land to lease, collect rentals and royalties, to drill and operate for oil and gas, as now provided for in oil and gas lease now in existence and on said above described lands.

BEING all the coal and mining rights excepted and reserved in deed dated July 8, 1922 to Cecil H. Perkins from Margaret C. Egger, et al, recorded in Vol. 92, Page 500, Records of Deeds, Monroe County, Ohio, which reads as follows: "All coal in the underlying above described lands is herein excepted and reserved, and any surface land that may be needed by the Grantors, their executors, administrators and assignees, for the mining, operating and removal of the coal shall be paid for the agreed

ADDENDUM TO RIGHT-OF-ENTRY AFFIDAVIT, AMERICAN ENERGY CORP.

price of One Hundred Dollars per acre, and all surface damages are excepted and waived... be the same more or less but subject to all legal highways," and said coal and mining rights were conveyed by Margaret C. Egger, et al, to the Monbel Company by deed dated September 28, 1948 and recorded in Vol. 122, Page 100, Records of Deeds, Monroe County, Ohio.

Parcel No. 22      2-3-26

SITUATED in the Township of Sunbury, County of Monroe and State of Ohio and being all of the Pittsburgh No. 8 coal with the mining rights in and underlying the East half of the Northeast quarter of Section 6, Range 5, Township 5, beginning at the Northeast corner of the section; thence North 85 $\frac{1}{4}$ ° West 82.11 rods to the Northwest corner of the East half of the Northeast quarter of said section; thence South 4 $\frac{1}{4}$ ° West 158.6 rods, thence South 85 $\frac{1}{4}$ ° East 82 rods to the section line; thence by same North 4 $\frac{1}{4}$ ° East 158.6 rods to the place of beginning, containing 81.36 acres, more or less.

TOGETHER with the mining rights reserved in the conveyance dated April 1, 1908, to Israel Coon by William A. Williams and his wife Mary E. Williams, which reads as follows: "Reserving all coal, oil and gas beneath the surface and reserving the right to mine, lease, sell, operate for, and market the same, and all the privileges necessary to operate for and mine the same, including water and pipeline rights, the right of way over and under the surface, and the rights of ingress and egress without being held liable for damage to the surface and the growing crops," and the coal and mining rights of said reservation were conveyed by William A. Williams to Board of Foreign Missions of the Methodist Episcopal Church by deed dated November 13, 1916 and recorded in Vol. 84, Page 416 of the Records of Deeds, Monroe County, Ohio.

BEING the same coal and mining rights conveyed to The Monbel Company by Division of Foreign Missions of the Board of Missions and Church Extension of the Methodist Church, by deed dated November 5, 1948, and recorded in Vol. 122, Page 193 of the Records of Deeds, Monroe County, Ohio.

Parcel No. 23

BEING the Pittsburgh No. 8 coal with the mining rights of record under a tract in the Village of Beallsville, Monroe County, Ohio, and known as and being lots 69, 70 and 71 in Daniel's Addition, also a part of the Southwest quarter of Section 6, Township 5, Range 5 of Sunbury Township, Monroe County, Ohio, and described as beginning at the Northeast corner of Lot 71 of Daniel's Addition; thence S. 17 poles; thence E. 22 poles; to the lands formerly of Thomas W. Fletcher; thence by the same N. 18 poles to the old right of way of O.R.&W. Railroad; thence in a Westerly course by same 22 perches to the place of beginning, containing 2.40 acres, and containing in all, including said lots, 3.3 acres, more or less.

Excepting therefrom three-fourth (3/4) of an acre sold to the Standard Oil Company by deed dated October 11, 1922, and recorded in Volume 92, Page 498 of the Deed Records of said County, to which reference is made for a more complete description of said three-fourth acre tract. Leaving after said exception 2.55 acres.

TOGETHER with the free and uninterrupted right of way into, upon and under said lands at such points and in such manner as may be

ADDENDUM TO RIGHT-OF-ENTRY AFFIDAVIT, AMERICAN ENERGY CORP.

TOGETHER with the right and privilege to mine all of said coal without reservation or liability for damages that may arise by reason of mining of said coal or the operation of said mine or mines to the surface or to the improvements upon the surface over said coal, or to any waters or water ways situated upon, or on said premises, and the right to use any and all entries and other passage ways under said lands for the purpose of transporting and mining coal from adjoining and contiguous territory, and together with right and privilege to use the necessary surface over said coal for the purpose of renting, constructing and maintaining the necessary air shafts to ventilate mines for removing of said coal and coal from adjoining and contiguous territory, said air shafts to be kept in such report and so guarded by said grantees, their heirs and assigns, as not to endanger stock on said premises, and together with the right to enter upon said described premises at all reasonable times to make necessary surveys, or to drill or examine said coal in any reasonable manner.

SAID grantors reserve unto themselves and unto their heirs and assigns the right to drill and operate through said vein of coal for oil and gas and all other minerals. Mining rights as recited in Deed from Isaac Hartline, et al., dated August 11, 1923 and recorded in Vol. 34, Page 134, Record of Deeds, Monroe County, Ohio.

Parcel No. 25    2-3-30

BEING the Pittsburgh No. 8 coal with the mining rights of records in and under the following described tract: Situated in the Township of Sunbury, County of Monroe and State of Ohio and known as a part of the Southwest and part of the Northwest quarter of Section 6, Township 5, Range 5, beginning for the same quarter post between Sections 6 and 12 of Township 5, Range 5; thence North with the Section line 99 perches to a post; thence South  $87\frac{1}{2}^{\circ}$  East 43.20 perches to a post; thence South  $2\frac{1}{2}^{\circ}$  West 40 perches; thence South  $87\frac{1}{2}^{\circ}$  East 43.50 perches to a post in the road; thence with road South  $8\frac{1}{2}^{\circ}$  East 60 perches and 20 links to a post in the forks of the road; thence South  $33^{\circ}$  West with the road 38 perches and 10 links to a stone in turn of the road; thence South  $2\frac{1}{2}^{\circ}$  West 6 rods and 11 links to a post on the North boundary of the Ohio River and Western Railroad (formerly the B.Z. and C.); thence in a Southwesterly direction with the meanderings of the North boundary of said O.R. and W.R.R. to a post in the section line 50 feet North of the original Southwest corner of the tract of land conveyed by William McMasters to W.T.H. Daniels; thence North with the section line 56 perches and 26.3 links to the place of beginning, containing 74 acres, more or less.

EXCEPTING a small corner out of the Southwest corner of said farm sold and deeded by F.A. Jeffers and W. M. Jeffers to Jacob Tschappet. (We believe this exception to be 1 acre as shown on G. C. copy of an old map.)

TOGETHER with the free and uninterrupted right of way into, upon, and under said land at such points and in such manner as may be proper and necessary for the purpose of digging, mining, coking, draining and ventilating and carrying away said coal (hereby waiving all surface damages or damages of any sort arising therefrom or from the removal of all of said coal) together with the privilege of mining and removing through, upon and over said described premises other coal belonging to said party of the record part, his heirs and assigns, or which may hereafter be acquired.



ADDENDUM TO RIGHT-OF-ENTRY AFFIDAVIT, AMERICAN ENERGY CORP.

SAID grantors herein, for themselves, their heirs and assigns, hereby reserve the right to drill and operate through said coal for oil and gas or other minerals without liability for damages growing out of the same. It is further made a condition in this deed, and the same is taken subject thereto, that if any surface ground is necessary to be taken in the operation for coal under this deed, the same may be taken, but the amount of which and the location thereof is to be determined when the same is desired to be used and at a price then to be mutually agreed upon between the grantors in this deed or their assigns, and the grantees herein and his assigns.

SAID grantee shall have the right to enter upon said land to drill and test said coal without liability for damages.

MINING rights as recited in deed from F. A. Jeffers, et al, dated July 15, 1909 and recorded in Vol. 73, Page 631 Records of Deeds, Monroe County, Ohio.

The foregoing 3 parcels being Tract One, Tract Two and Tract Three in the deed from A. A. Caldwell, et al., to the Monbel Company dated October 14, 1946 and recorded in Vol. 119, Page 242, Records of Deeds, Monroe County, Ohio.

Parcel No. 26

BEING the Pittsburgh No. 8 coal with the mining rights of record under certain tract in Sunbury Township, Monroe County, Ohio, and bounded and described as follows: Being a part of the W. half of Section 6, Township 5, Range 5 and bounded and described as follows:

BEGINNING for the same at the quarter post between Sections 6 and 12 of Township 5, Range 5; thence North with the Section line 99 perches to a post; thence South  $87\frac{1}{2}^{\circ}$  East 43.20 perches to a post; thence South  $2\frac{1}{4}^{\circ}$  West 40 perches, thence South  $87\frac{1}{2}^{\circ}$  East 13.50 perches to a post in the road; thence with the road South  $8\frac{1}{2}^{\circ}$  East 60 perches and 20 links to a post in the forks of road; thence South  $33^{\circ}$  West with the road 38 perches and 10 links to a stone in the turn of the road; thence South  $2\frac{1}{4}^{\circ}$  West 6 rods and 11 links to a post on the North boundary of the Ohio River & Western R.R. (formerly the B.Z.&C.) thence in a Southwesterly direction with the meanderings of the north boundary of said O.R. & W. R.R. to a post in Section line 50 feet north of the original Southwest corner of a tract of land conveyed by William McMasters to W.T.H. Daniels; thence North with the Section line 56 perches and 26.3 links to the place of beginning, containing 70 acres, more or less, except a small corner out of the Southwest corner of said farm sold and deeded by F. A. Jeffers and W. M. Jeffers to Jacob Tschappat, and bounded and described as follows: BEING a part of the Southwest quarter of Section 6, Township 5, Range 5 and commencing for the same at a post at the Southwest corner of a tract of land formerly owned by John Jeffers, late of Monroe County, Ohio, deceased and being the same tract of land now owned by grantors herein, and running thence north along the west boundary of said tract of land 28' feet to a stone in the run; thence eastwardly along the line of said run 256 feet to a stone in the run; thence in a southeast course 157 feet to a stone by the railroad; thence along the south boundary of said tract of land first described herein 389 feet to the place of beginning, containing 1 acre, more or less.

TOGETHER with the free and uninterrupted right of way, into, upon and under said land at such points and in such manner as may be

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proper and necessary for the purpose of digging, mining, coking, draining and ventilating and carrying away said coal, etc. (hereby waiving all surface damage and damages of any sort arising therefrom, or from the removal of all of said coal) together with the privilege of mining and removing through, upon and over said described premises, other coal belonging to said grantee, his heirs and assigns, or which may hereafter be acquired. Said grantors herein, for themselves, their heirs and assigns, hereby reserve the right to drill and operate through said coal for oil and gas or other minerals without liability for damages growing out of same.

BEING Tract Two in the conveyance from Jessie R. Savage to The Monbel Company, recorded April 23, 1947 in Volume 120, Page 72, Records of Deeds, Monroe County, Ohio.

THE prior grantor Manor Real Estate Company held Title to and was owner of Mon-Bel Company tracts by transfers as follows:

By Amendment to Articles of Incorporation dated November 16, 1945, whereby Mon-Bel Coal Company changes its name to The Monbel Company, recorded December 3, 1945, Volume 499, Page 396, Records of Incorporation, Office of The Secretary of State of Ohio.

By Deed dated April 26, 1946, recorded in Volume 118, Page 608, Deed Records of Monroe County, Ohio whereby Mon-Bel Coal Company conveyed to The Monbel Company all its real estate in Monroe County, known as and being the Pittsburgh No. 8 Coal with mining rights.

By Articles of Merger dated December 23, 1954, recorded July 27, 1971 in Volume 159, Page 498, Deed Records of Monroe County, Ohio, whereby The Monbel Company was merged into Manor Real Estate Company.

IT is the intent of the Grantor herein to convey to the Grantee, its successors and assigns all of the Pittsburgh No. 8 coal and mining rights appurtenant thereto, situated in Sections 30 and 36 Township 4, Range 4, and Sections 6 and 12, Township 5, Range 5, Sunbury Township, Monroe County, Ohio, of which the Grantor is seized at the date hereof.

Prior Deed Reference: Volume 170, Page 677 of the  
Monroe County Deed Records

TRANSFERRED NO. 74  
DATE 3-21-95 SEC. 310.202 COMPLETED WITH  
JAMES N. NEUFELT, Auditor, Monroe County, Ohio  
BY sdh/pjt FEE 5.00 MILL 600.00

ADDENDUM TO RIGHT-OF-ENTRY AFFIDAVIT, AMERICAN ENERGY CORP.

Further, Seller shall quitclaim to Purchaser the following mining rights:

Together with the full right to explore for, test, work, mine, produce, develop, clean, process, sell and remove any or all of the coal in and underlying the premises by any surface or underground mining method or machinery, whether now or hereafter known, including, but not limited to, the strip mining process, auger or highwall mining process, and longwall mining process; the right of ingress, egress and regress to, from, over and across said premises and adjoining premises owned or controlled by Grantee for the purpose of removing and transporting coal from within or without said premises without additional charge; the right to bring upon said premises men, machinery, materials and equipment necessary, convenient or useful for the exploring, testing, mining and marketing of said coal by the methods hereunder authorized; the right to construct, erect, use, maintain, repair, replace, move, remove, and relocate in or under the premises roads, conveyor systems, machinery, railroad tracts, shops, power and communications lines and other equipment and facilities; the right to transport personnel, supplies, equipment, coal and other materials into, through and under said premises; the right to mine said coal without any requirement to provide any lateral or subjacent support to the premises, or any liability to Grantee for any damage which may result either to the surface of, or any strata in, on or under said premises or to any surface or underground water supplies or sources located thereon or therein or to any structures now on or hereafter constructed on said premises; and all such other rights, powers and privileges as may be necessary, useful or incidental thereto, including, without limitation, the right to make and use openings and underground passages for any purposes, including, but not limited to, ventilation and drainage, and to disturb so much of the surface and subsurface of the premises as may be useful or incidental in accordance with the mining methods adopted by Grantee, including the right to deposit spoil, rock earth and gob from said premises or adjoining premises, on said premises.

The Grantee shall have the right to mine the fifty (50) foot property line barrier wherever Grantee controls, coal adjacent to said premises or wherever Grantee secures a waiver of the fifty (50) foot property line barrier requirement from owners of, or operators upon, adjacent properties.

009437

MONROE CO. RECORD OF DEEDS  
VOL. 11 PAGE 989  
RECEIVED  
95 MAR 24 PM 12:47  
RECORDED *March 24, 1995*  
MARSHA LOUISE REID  
RECORDER FEE *14.50*

**D. AREAS WHERE MINING IS PROHIBITED OR LIMITED**

- (1) Is this application area within an area designated unsuitable for coal mining operations or under study for designation in an administrative proceeding?

Yes ☐ No ☒

If "yes," did the applicant make substantial legal and financial commitments in this application area prior to January 4, 1977? Yes ☐ No ☐ If "yes," provide documentation supporting the assertion that the commitments were made prior to January 4, 1977.

**E. PERMIT TERM AND RELATED INFORMATION**

- (1) Anticipated/actual date for:

(a) Starting mining operations **December, 2010**

(b) Terminating mining operations **October, 2014**

- (2) Does the applicant propose a permit term in excess of five (5) years?

Yes ☐ No ☒ If "yes," submit an addendum with the information required by 1501:13-4-03(E)(3), Ohio Administrative Code.

- (3) Horizontal extent of shadow area over life of permit in acres:

(a) Full Coal Recovery/Longwall Mining Acreage **388.9**

(b) Room and Pillar Acreage **352.3**

(c) Total Acres **741.2** (Shadow Area)

**F. PUBLIC NOTICE**

- (1) In the space below, provide the name and address of the public office where a complete copy of this permit application is to be filed.

**Belmont County Courthouse  
Recorder's Office  
101 West Main Street  
St. Clairsville, Ohio 43950**

**Monroe County Recorder's Office  
Monroe County Courthouse  
101 N. Main Street  
Woodsfield, Ohio 43793**

- (2) In the space below, list the name and address of the newspaper and provide the text of the advertisement that is to be published in a newspaper of general circulation in the locality of this application area. Provide proof of publication.

**The Times Leader**  
200 South 4<sup>th</sup> Street  
Martins Ferry, Ohio 43935

**Monroe County Beacon**  
103 E. Court Street  
Woodsfield, Ohio 43793

**Public Notice**

American Energy Corporation, 43521 Mayhugh Hill Road, Beallsville, Ohio 43716, has submitted an underground coal mining application D-425-14 to the Ohio Department of Natural Resources, Division of Mineral Resources Management. The application area is located in Belmont County, Ohio, Wayne Township in Sections 1 and 7, T-6 R-5; Monroe County, Ohio, Sunsbury Township in Sections 6 and 12, T-5 R-5. The application contains 743.7 underground acres and is located on the Woodsfield 7 1/2 Minute USGS Quadrangle Map, approximately 950 feet north of Beallsville, Ohio. This coal mining application will remove coal using the underground mining methods, specifically the room/pillar and longwall mining methods.

The application is on file at the Belmont County Courthouse, Recorder's Office, 101 West Main Street, St. Clairsville, Ohio 43950 and the Monroe County Courthouse, Recorder's Office, 101 N. Main Street, Woodsfield, Ohio 43793 for public viewing. Written comments or requests for an informal conference may be sent to the Division of Mineral Resources Management, 2050 E. Wheeling Avenue, Cambridge, Ohio 43725-2159 within (30) days after the last date of publication of this notice.

The State of Ohio  
County of Belmont, ss:

The undersigned, being sworn, says that he or she is an employee of Eastern Ohio Newspapers, Inc., A Corporation, publisher of the Times Leader a newspaper published in Martins Ferry, Belmont County, Ohio, each day of the week and of general circulation in said city and county; that it is a newspaper meeting the requirements of sections 7.12 and 5721.01 Ohio Revised Code as amended effective September 24, 1957; that affiant has custody of the records and files of said newspaper; and that the advertisement of which the annexed is a true copy, was published in said newspaper on each of the days in the month and year stated, as follows:

June 16, 23, 30,  
July 7 2009  
Candace Crowell

Subscribed by Affiant and sworn to before me, this 7th day of July, A.D. 2009.

Rebecca L Anderson  
Notary Public



REBECCA L. ANDERSON  
Notary Public, State of Ohio  
My Commission Expires Nov. 25, 2011

Printer's Fee \$ 296.16

Notary's Fee \$ \_\_\_\_\_

The Times Leader  
Martins Ferry, Ohio

PUBLIC NOTICE

American Energy Corporation, 43521 Mayhugh Hill Road, Beallsville, Ohio 43716, has submitted an underground coal mining application D-425-14 to the Ohio Department of Natural Resources, Division of Mineral Resources Management. The application area is located in Belmont County, Ohio, Wayne Township, in Sections 1 and 7, T-6 R-5; Monroe County, Ohio, Sunbury Township in Sections 6 and 12, T-5, R-5. The application contains 743.7 underground acres and is located on the Woodsfield 7 1/2 minute USGS Quadrangle Map approximately 950 feet north of Beallsville, Ohio. This coal mining application will remove coal using the underground mining methods, specifically the room/pillar and longwall mining methods.

The application is on file at the Belmont County Courthouse, Recorder's Office, 101 West Main Street, St. Clairsville, Ohio 43950 and the Monroe County Courthouse, Recorder's Office, 101 N. Main Street, Woodsfield, Ohio 43793 for public viewing. Written comments or requests for an informal conference may be sent to the Division of Mineral Resources Management, 2050 E. Wheeling Avenue, Cambridge, Ohio 43725-2159, within thirty (30) days after the last date of publication of this notice.

TL Adv. - 4 Tues. - June 16, 23, 30, July 7

**PUBLIC NOTICE**  
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I, Arlean Selvy, do solemnly swear that the notice, a copy of which is hereto attached, was published for four (4) consecutive weeks on/or after June 11, 2009 in the

**MONROE COUNTY BEACON**  
 a newspaper of general circulation in  
 Monroe County, Ohio

Arlean Selvy, Publisher  
 Printer's Fee \$ 240.63

Sworn to and subscribed before me this 17<sup>th</sup> day of August, 2009.



Sheila J. McKee  
**SHEILA J. MCKEE**  
 NOTARY PUBLIC, STATE OF OHIO  
 MY COMMISSION EXPIRES 11-08-10



## **PART 3: RECLAMATION AND OPERATIONS PLAN**

### **A. GENERAL REQUIREMENTS**

- (1) Describe the type and method of coal mining procedures.

**Longwall mining and room/pillar methods. See Addendum to Part 3, A. (1)**

- (2) Describe the proposed engineering techniques to be used in this mining operation.

**This application area will be mined by the longwall/room and pillar methods of mining. Longwall mining is a method by which large panels of coal are surrounded by entries and are then extracted. The roof is temporarily supported by shields as the longwall machinery cuts the coal. The shields are then hydraulically moved forward, allowing the roof to collapse behind them. Subsidence of the surface occurs as the strata above the mine first collapses into the void left from the extracted coal, then the overlying strata deforms and comes to rest atop the rubble. Monitoring at a nearby longwall mine in the Pittsburgh No. 8 coal seam shows that the surface subsides approximately 60 to 65 percent of the seam thickness of about 60 inches. This mining method maximizes the recovery of the reserve by leaving coal only in the development entries (main and gate entries) and barrier pillars to protect the main entries. Room and pillar mining is the method by which coal is extracted by a full face continuous mining machine. Entries and crosscuts are mined leaving coal pillars for support. This method maximizes coal extraction without subsiding the overlying surface.**

**The mining will progress from existing travelways in the D-0425 underground mine to this application area through main entries that will carry the ventilation currents and contain the haulage entries. These main entries will branch down into the gate entries that will surround the longwall panels. While continuous miners are used for these development entries, they are not considered production sections. These mining units are considered part of the longwall mining to be conducted at the Century Mine. Full coal recovery will take place as shown on the Application/Hydrology map.**

- (3) Anticipated annual production of coal: **1,169,820 tons**  
Anticipated total production of coal: **5,849,100 tons**

- (4) List the major pieces of equipment to be used for all aspects of the operation.

**Longwall shearer, shields, face conveyor, continuous miner, roof bolters, shuttle cars, scoop cars, tail piece, crusher, and beltline.**

- (5) Submit Performance Security Estimate providing an estimate of the reclamation cost on the proposed operation.

- (6) Will the proposed mining operations be within 25 feet of any known oil or gas well?

☒ Yes ☐ No If yes, submit a variance request as an addendum to this item.

ADDENDUM TO PART 3, ITEM A.(1)  
 AMERICAN ENERGY CORPORATION  
 CENTURY MINE  
 PERMIT D-0425-14

Current capacity for 5,649,747 tons of coal waste is available at the Coarse Coal Refuse site on Permit D-0425-2. D-0425-14 application will generate 1,754,730 tons of coal waste. The D-0425-14 figures were calculated using 40% reject, 3 to 1 coarse to fines, (75% coarse coal).

<b><u>D-0425-14 Permit Beallsville Area</u></b>			
ROM	Clean Tons	Total	Refuse
Coal Tons	60.00%	Reject	To Site
5,849,100	3,509,460	2,339,640	1,754,730

Current capacity for 11,528,976 tons of slurry is available at the Ohio Valley Coal Company No. 2 Dam. Permit D-0425-14 application will generate 584,910 tons of slurry fines (3:1 coarse to fine ratio). The No. 2 Dam has the capacity to contain the D-0425-14 slurry fines.

<b><u>D-425-14 Permit Beallsville Area</u></b>			
ROM	Clean Tons	Total	Slurry
Coal Tons	60.00%	Reject	3:1
5,849,100	3,509,460	2,339,640	584,910

**Addendum to Part 3, Item A(1) - Coarse Coal/Slurry  
American Energy Corporation  
Century Mine**

Coarse Coal and Slurry estimates from reserves already permitted that have not been mined:

(Tons)

<u>Permit</u>	<u>Total Reject</u>	<u>Coarse Coal</u>	<u>Slurry</u>
0425-5	4,318,617	3,238,963	1,079,654
0425-9	3,313,172	2,484,879	828,293
0425-10	282,410	211,808	70,602

**Addendum to Part 3, Item A(1)  
American Energy Corporation  
Century Mine**

**Mining to be conducted within the limits of the proposed adjacent area, D-0425-14,  
shall utilize the longwall/room and pillar methods of mining as described in Part 3, Item A(2). Machinery and equipment used for this type of mining is listed in Part 3, Item A(4).**

**The approximate timing for the mining operations within this proposed adjacent area is shown on the Timing, Structure Contour, Coal Deed Map, Addendum to Part 4, Item B.(1). All areas included in this adjacent area application are designated as either full coal recovery or room and pillar mining. This method of permitting will allow for the changes in the mine plan which may be caused by unforeseen geologic conditions, production demand changes, or any other problems which may arise during the underground mining operations.**

## PURCHASE AGREEMENT, ASSIGNMENT AND BILL OF SALE

This Purchase Agreement, Assignment and Bill of Sale ("Agreement") is made and entered into this 14<sup>th</sup> day of January, 2010 (the "Effective Date"), by and between Conn Oil, LLC, an Ohio company, having an address of 38204 Winland Road, Graysville, OH 45734 ("Assignor"), and American Energy Corporation, an Ohio corporation, having an address of whose address is 43521 Mayhugh Hill Rd., Twp. Hwy. 88, Beallsville, OH 43716 ("Assignee").

WHEREAS, Assignor is the present owner of six (6) oil and/or gas wells lying, being and situated in Wayne Township, Belmont County, Ohio, and Sunbury Township, Monroe County, Ohio, shown on the attached *Exhibit A*, and being more particularly described and designated as follows (the "Assigned Wells"):

Name	API No.
R. and T. Jarrett	61298
R. and T. Jarrett	61306
R. and T. Jarrett	61307
B. Mellott	64129
B. Mellott	64131
B. Mellott	????? (surveyed and verified in field and on <i>Exhibit A</i> ); and

WHEREAS, Assignor acquired the Assigned Wells by virtue of that certain Gas and Oil Well Assignment dated June 5, 2002, and of record in the Office of the Clerk of the County Commission of Belmont County, Ohio in the Official Records Book 112, page 482, and of record in the Office of the Clerk of the County Commission of Monroe County, Ohio in the Official Records Book 89, page 126 (collectively, the "Leases"); and

WHEREAS, the Assigned Wells are located upon, within and under the Leases; and

WHEREAS, Assignee desires to obtain ownership and control of the Assigned Wells in order to plug and abandon the Assigned Wells, and Assignor has agreed to assign and convey to Assignee all of Assignor's right, title and interest in and to the Assigned Wells for said purposes including, but not limited to, the well bores, casing, rods, valves, well head fittings and other appurtenant well equipment and well fixtures, if any, together with any and all appurtenances thereto including, without limitation, an absolute, non-exclusive easement or right of way across the lands leased under the Leases to the Assignor for the purposes of Assignee's ingress, egress and regress to and from the Assigned Wells to plug and abandon the wells.

NOW, THEREFORE, in consideration of sixty-nine thousand seven hundred eighty dollars (\$69,780.00) in hand paid, together with other good and valuable consideration, the receipt of which is hereby acknowledged, the parties agree as follows:

1. **Conveyance and Assignment.** Assignor does hereby sell, assign, transfer, set over, grant and convey to Assignee all of Assignor's right, record title, operating rights and interest in and to:

Addendum to Part 3, A(6), American Energy Corporation

(i) All of Assignor's undivided right, title and interest in and to the Assigned Wells including, without limitation, the absolute right to abandon and plug said Assigned Wells, together with the well bores, casing and other fixtures connected to or associated with the Assigned Wells, and other appurtenant well equipment and well fixtures located thereon. Notwithstanding the foregoing, Assignor shall have the right to recover the rods, tubing, pump jacks and any other appurtenant wellhead equipment from the Assigned Wells, but in no event shall Assignors recovery: interfere with or hinder Assignees well plugging efforts; or occur after APRIL 30, 2010.

(ii) To the extent Assignor may lawfully assign and convey the same and to the extent relating directly and exclusively to the Assigned Wells, all of Assignor's undivided interest in and to all documents, contracts and agreements relating to the Assigned Wells.

(iii) All of Assignor's undivided interest in and to all of the real, personal and mixed property (including well bores, casing, and other appurtenant well equipment and well fixtures located thereon) and all other fixtures and improvements appurtenant to the Assigned Wells or used in connection therewith. Notwithstanding the foregoing, Assignor shall have the right to recover the rods, tubing, pump jacks and any other appurtenant wellhead equipment from the Assigned Wells, but in no event shall Assignors recovery: interfere with or hinder Assignees well plugging efforts; or occur after APRIL 30, 2010.

(iv) All of Assignor's interest in all operating rights, permits, franchises, easements, rights-of-way, surface rights, agreement rights under warranties made by prior owners of the Assigned Wells, manufactures, vendors and other third parties, rights accruing under applicable statutes of limitations and other rights, estates and interests incident or relating to the Assigned Wells.

Items (i) through (iv) above are collectively referred to herein as the "Property".

2. **Fixtures.** At any time after the Effective Date, Assignee shall have the right to utilize or remove or otherwise affect any gathering and distribution pipelines and other fixtures connected to or associated with the Assigned Wells to the extent that Assignee deems such activity to be necessary to accomplish the plugging of the Assigned Wells.

3. **Representations, Covenants and Warranty.** Assignor hereby covenants and warrants that it has the full power and sole authority to convey the Property and the Assigned Wells as contemplated by this Agreement. Assignee hereby covenants and warrants that it has the full power and authority to accept the conveyance of the Property and the Assigned Wells as contemplated by this Agreement.

Assignor further covenants that as of the Effective Date of this Agreement, it will not attempt to reopen, rework, or otherwise attempt to produce oil or gas from any of the Assigned

Wells or any other wells, whether abandoned or not, on the Leases, nor will Assignor attempt to drill any new wells of any kind or nature on the Leases, nor will Assignee assign, convey or sell the Leases to any other person or business entity, except Assignee or its affiliates, but Assignee shall have no obligation to purchase the Leases from Assignor.

**4. Disputes and Arbitration.**

Any dispute regarding the matters set forth herein or disputes of any sort or nature whatsoever arising out of this Agreement shall be resolved by arbitration. Each party shall select a competent and disinterested arbitrator having expertise in the area of the dispute, and the two arbitrators so selected shall select a third arbitrator. Each party shall bear the expense of the arbitrator he selects, and the parties shall bear equally the cost of the third arbitrator. The arbitrators shall evaluate the issue under consideration and shall render their opinion thereon. The decision of at least two of the arbitrators shall be decisive. The decision so rendered shall be binding on the parties, and each party shall promptly perform such acts as are necessary to effectuate the decision. The manner of resolution of disputes provided for herein shall be exclusive, and the parties hereby waive any and all other remedies. If the parties fail to appoint arbitrators as provided for herein or if the arbitrators appointed by the parties are unable to agree upon a third arbitrator, then an arbitrator shall be appointed by the American Arbitration Association.

**5. Right of Entry.**

At any time after the Effective Date of this Agreement, Assignor further grants to Assignee the right to enter upon the Property for the purpose of surveying and evaluating the Property and the Assigned Wells, and to do whatever else is necessary to prepare to abandon and plug the Assigned Wells.

**6. Possession.**

Peaceful and quiet possession of the Property and the Assigned Wells shall be delivered to Assignee upon the Effective Date of this Agreement.

**7. Confidentiality.**

Assignee and Assignor acknowledge that the terms of this Agreement are and shall be kept proprietary and strictly confidential. Assignor warrants that it has not disclosed, communicated, disseminated or publicized or allowed and will not disclose, communicate, disseminate or publicize or allow the disclosure, communication, dissemination, or publication of the substantive and financial terms of this Agreement to any person, business or organization, or to any other person or entity except as is necessarily required in the negotiation of this Agreement, the reporting of income or the responding to order or subpoena of a court of competent jurisdiction or other governmental agency.

**8. Enforcement and Fees.**



Addendum to Part 3, A(6), American Energy Corporation

If it becomes necessary for either party to enforce any of the terms of this Agreement against the other, the non-prevailing party shall pay all reasonable costs and expenses incidental thereto, including reasonable attorneys' fees.

**9. Notice.**

Any notices to be given under this Agreement shall be deemed to have been properly given if in writing and delivered in person or by certified mail/return receipt requested, with all necessary postage or charges fully prepaid, at the address for the respective parties as shown below.

To Assignor: Conn Oil, LLC  
38204 Winland Road  
Graysville, OH 45734

To Assignee: American Energy Corporation  
43521 Mayhugh Hill Road  
Beallsville, OH 43716  
Attn: President

With a copy to: Murray Energy Corporation  
29325 Chagrin Boulevard, Suite 300  
Pepper Pike, OH 44122  
Attn: Chairman, President and Chief Executive Officer

or to any such other address as each party may choose by giving written notice thereof to the other. If delivered in person, such notice shall be considered given when received or, if mailed, such notice shall be considered received four days after mailing.

**10. Entire Agreement.**

This Agreement constitutes the entire agreement between the parties and Assignor understands and acknowledges that no agent of Assignee has authority to make representations or negotiate any terms as to this transaction other than as stated in this Agreement.

**11. Time is of the Essence.**

Time is of the essence of this Agreement and the terms hereof shall be binding upon, and inure to the benefit of, the parties hereto, their heirs, devisees, legal representatives, successors and assigns.


**12. Ohio Law.**

This Agreement shall be construed in accordance with the laws of the State of Ohio.

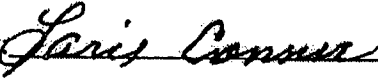
Addendum to Part 3, A(6), American Energy Corporation


IN WITNESS WHEREOF, the parties have executed this Agreement on the day and year first above written.

Witness:

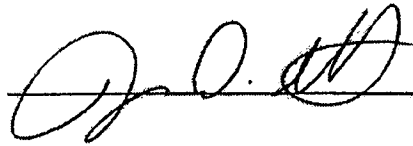
  
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Assignor: Conn Oil, LLC

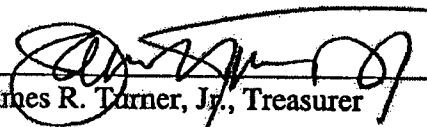
By:   
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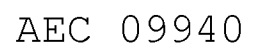
Its:   
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Witness:

  
\_\_\_\_\_

Assignee: American Energy Corporation

By:   
James R. Turner, Jr., Treasurer



Addendum to Part 3, Item A(6)  
American Energy Corporation

American Energy Corporation is proposing to mine through known gas/oil wells located within the proposed underground works area. These gas/oil wells are shown on the application map, in the record location per information obtained from the Division of Mineral Resources Management.

No later than three days prior to the mining being within 25 feet of a well, pursuant to O.R.C. 1563.111 American Energy Corporation will notify ODNR's Mine Safety Division to request permission from the Chief to mine within 25' and through these wells. As mining approaches the gas/oil wells at their recorded location, an honest effort will be made to locate the wells. If the wells are found, microfilm at the Division of Mineral Resources Management will be reviewed to determine if the wells were appropriately plugged. If it is found that the well was not appropriately plugged, the operator will verify the owner of the well, apply for a plugged permit, appropriately plug the well with neat cement, and mining will proceed. If wells cannot be located at their record location, and are inadvertently intercepted by mining, an honest effort will be made immediately to plug the well with on-site compacted clay material.

The proposed mining operation will maintain safe operating practices in any work involving areas near encountered gas/oil wells. Work shall be done in order to ensure the safety of people, livestock, fish and wildlife and machinery in the mine.

Addendum to Part 3, A(6) American Energy Corporation

U.S. Department of Labor

Mine Safety and Health Administration  
4015 Winder Boulevard  
Arlington, Virginia 22203-1964



FEB 27 2002

In the matter of  
American Energy Corporation  
Century Mine  
I.D. No. 33-01070

Petition for Modification

Docket No. M-2001-097-C

PROPOSED DECISION AND ORDER

On September 25, 2001, a petition was filed seeking a modification of the application of 30 CFR 75.1700 at Petitioner's Century Mine in Belmont County, Ohio. The Petitioner alleges that the alternative method outlined in the petition will at all times guarantee no less than the same measure of protection afforded by the standard.

The alternative method proposed by the petitioner is similar to that approved under similar petitions for modification with the exception of certain terms and conditions. Specifically, the District Manager has the authority to allow mining within 300 feet without plugging, and to accept wells cleaned and plugged prior to the effective date of this Order if the plugging methods are documented and meet the terms and conditions of this Order.

MSHA personnel conducted an investigation of the petition and filed a report of their findings and recommendations with the Administrator for Coal Mine Safety and Health. After a careful review of the entire record, including the petition and MSHA's investigative report and recommendation, this Proposed Decision and Order (PDO) is issued.

Finding of Fact and Conclusion of Law

The alternative method proposed by the Petitioner (as amended by MSHA) will at all times guarantee no less than the same measure of protection afforded the miners under 30 CFR 75.1700.

The petitioner projects that there are approximately 22 oil and gas wells to be plugged and mined through in the next five years of longwall mining. Typically, the wells are 1,800 to 2,200 feet deep. However, some oil and gas can be found at 1,200 to 1,500 feet. The Century Mine is extracting coal in the Pittsburgh No. 8 Coal Seam. There are no known old workings in the coal seams above or below the Pittsburgh No. 8. The No. 6 and 6A Coal Seams are located approximately 640 feet and 570 feet respectively below the Pittsburgh No. 8 Coal Seam. These seams are more than 800 feet below the surface and are more than 24 inches thick.

## Addendum to Part 3, A(6) American Energy Corporation

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Generally, the Pittsburgh No. 8 Coal Seam is 200 to 250 feet from the surface depending upon the topography. The majority of the wells which will be plugged were drilled before 1930 prior to enactment of any drilling or plugging standards. Also, many of the well were abandoned before federal or state regulations became effective.

Unless the existing records show that an abandoned well was plugged using techniques equivalent to this proposed decision and order's terms and condition, and that information is submitted and accepted in accordance with Paragraph 2(s) as providing the required level of safety by the District Manager, the well shall be again cleaned, inadequate plugging materials drilled out and the well plugged in accordance with the terms and conditions of this proposed decision and order before such wells may be cut through or approached within the allowed limits. The summary information provided by the petition suggests that special attention to securing and interpreting the suite of drill logs required by Paragraph 1(a)(4) is needed to ensure that, at a minimum, the expanding cement plug extends from at least 200 feet below the lowest minable seam through 100 feet above the highest minable seam, unless the seams are separated by an interval greater than 300 feet, in which case each seam may be plugged individually.

On the basis of the petition and the findings of MSHA's investigation, American Energy Corporation is granted a modification of the application of 30 CFR 75.1700 to its Century Mine.

### ORDER

Wherefore, pursuant to the authority delegated by the Secretary of Labor to the Administrator for Coal Mine Safety and Health, and pursuant to Section 101(c) of the Federal Mine Safety and Health Act of 1977, 30 U.S.C., sec. 811(c), it is ordered that American Energy Corporation's Petition for Modification of the application of 30 CFR 75.1700 at the Century Mine is hereby:

GRANTED, for mining through or near (whenever the safety barrier diameter is reduced to a distance less than the District Manager would approve pursuant to Section 75.1700) plugged oil or gas wells penetrating the Pittsburgh No. 8 Coal Seam and other minable coal seams, conditioned upon compliance with the following terms and conditions:

Addendum to Part 3, A(6) American Energy Corporation

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1. Procedures to be utilized when plugging oil or gas wells.

a. Cleaning out and preparing oil and gas wells.  
Prior to plugging an oil or gas well, the following procedure shall be followed:

- (1) A diligent effort shall be made to clean the borehole to the original total depth. If this depth cannot be reached, the borehole shall be cleaned out to a depth which would permit the placement of at least 200 feet of expanding cement below the base of the lowest minable coal bed.
- (2) When cleaning the borehole, a diligent effort shall be made to remove all the casing in the borehole. If it is not possible to remove all casing, the casing which remains shall be perforated, or ripped, at intervals spaced close enough to permit expanding cement slurry to infiltrate the annulus between the casing and the borehole wall for a distance of at least 200 feet below the base of the lowest minable coal bed.
- (3) If the cleaned-out borehole produces gas, a mechanical bridge plug shall be placed in the borehole in a competent stratum at least 200 feet below the base of the lowest minable coal bed, but above the top of the uppermost hydrocarbon-producing stratum. If it is not possible to set a mechanical bridge plug, a substantial brush plug may be used in place of the mechanical bridge plug.
- (4) A suite of logs shall be made consisting of a caliper survey, directional deviation survey, and log(s) suitable for determining the top and bottom of the lowest minable coal bed and potential hydrocarbon producing strata and the location for the bridge plug.
- (5) If the uppermost hydrocarbon-producing stratum is within 200 feet of the base of the lowest minable coal bed, properly placed mechanical bridge plugs or a suitable brush



Addendum to Part 3, A(6) American Energy Corporation

plug described in Subparagraph (a) (3) shall be used to isolate the hydrocarbon producing stratum from the expanding cement plug. Nevertheless, a minimum of 200 feet of expanding cement shall be placed below the lowest minable coal bed.

- (6) The wellbore shall be completely filled and circulated with a gel that inhibits any flow of gas, supports the walls of the borehole, and increases the density of the expanding cement. This gel shall be pumped through open-end tubing run to a point approximately 20 feet above the bottom of the cleaned out area of the borehole or bridge plug.

b. Plugging oil or gas wells to the surface. The following procedures shall be utilized when plugging gas or oil wells to the surface:

- (1) A cement plug shall be set in the wellbore by pumping an expanding cement slurry down the tubing to displace the gel and fill the borehole to the surface. (As an alternative, the cement slurry may be pumped down the tubing so that the borehole is filled with Portland cement or a Portland cement-fly ash mixture from a point approximately 100 feet above the top of the lowest minable coal bed to the surface with an expanding cement plug extending from at least 200 feet below the lowest minable coal bed to the bottom of the Portland cement.) There shall be at least 200 feet of expanding cement below the base of the lowest minable coal bed.
- (2) A small quantity of steel turnings, or other small magnetic particles, shall be embedded in the top of the cement near the surface to serve as a permanent magnetic monument of the borehole.

c. Plugging oil or gas wells using the vent pipe method. The following procedures shall be utilized when using the vent pipe method for plugging oil and gas wells:

- (1) A 4½-inch or larger vent pipe shall be run

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into the wellbore to a depth of 100 feet below the lowest minable coal bed and swedged to a smaller diameter pipe, if desired, which will extend to a point approximately 20 feet above the bottom of the cleaned cut area of the borehole or bridge plug.

- (2) A cement plug shall be set in the wellbore by pumping an expanding cement slurry, Portland cement, or a Portland cement-fly ash mixture down the tubing to displace the gel so that the borehole is filled with cement. The borehole and the vent pipe shall be filled with expanding cement for a minimum of 200 feet below the base of the lowest minable coal bed. The top of the expanding cement shall extend upward to a point approximately 100 feet above the top of the lowest minable coal bed.
- (3) All fluid shall be evacuated from the vent pipe to facilitate testing for gases. During the evacuation of fluid, the expanding cement shall not be disturbed.
- (4) The top of the vent pipe shall be protected to prevent liquids or solids from entering the wellbore, but permit ready access to the full internal diameter of the vent pipe when necessary.

d. Plugging oil and gas wells for use as degasification boreholes. The following procedures shall be utilized when plugging oil or gas wells for subsequent use as degasification boreholes:

- (1) A cement plug shall be set in the wellbore by pumping an expanding cement slurry down the tubing to displace the gel and provide at least 200 feet of expanding cement below the lowest minable coal bed. The top of the expanding cement shall extend upward to a point above the top of the coal bed being mined. This distance shall be based on the average height of the roof strata breakage for the mine.

Addendum to Part 3, A(6) American Energy Corporation

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- (2) To facilitate methane drainage, degasification casing of suitable diameter, slotted or perforated throughout its lower 150 to 200 feet, shall be set in the borehole to a point 10 to 30 feet above the top of the expanding cement.
  - (3) The annulus between the degasification casing and the borehole wall shall be cemented from a point immediately above the slots or perforations to the surface.
  - (4) The degasification casing shall be cleaned out for its total length.
  - (5) The top of the degasification casing shall be fitted with a wellhead equipped as required by the District Manager. Such equipment may include check valves, shut-in valves, sampling port, flame arrestor equipment, and security fencing.
2. The following cut-through procedures (a-t) apply whenever the petitioner reduces the safety barrier diameter to a distance less than the District Manager would approve pursuant to Section 75.1700 or proceeds with an intent to cut through a plugged well:
- a. Prior to reducing the safety barrier to a distance less than the District Manager would approve pursuant to Section 75.1700 or proceeding with an intent to cut through a plugged well, the operator shall notify the District Manager or his designee.
  - b. The MSHA District Manager or designee may conduct a conference prior to mining through any plugged well to review and approve the specific procedures for mining through the well. Representatives of the operator, the representative of the miners, and the appropriate State agency shall be informed, within a reasonable time prior to the conference, and be given an opportunity to attend and participate. This meeting may be called by the operator.
  - c. Mining in close proximity to or through a plugged well shall be done on a shift approved by the District Manager or designee.

Addendum to Part 3, A(6) American Energy Corporation

- d. The District Manager or designee, representative of the miners, and the appropriate State agency shall be notified by the operator in sufficient time prior to the mining through operation in order to have an opportunity to have representatives present.
- e. When using continuous mining equipment, drilage sights shall be installed at the last open crosscut near the place to be mined to ensure intersection of the well. The drilage sites shall not be more than 50 feet from the well. When using longwall mining methods, drilage sights shall be installed on 10-foot centers for a distance of 50 feet in advance of the well bore. The drilage sights shall be installed in the headgate and tailgate.
- f. Firefighting equipment, including fire extinguishers, rock dust, and sufficient fire hose to reach the working face area of the mining through shall be available when either the conventional or continuous mining method is used. The fire hose shall be located in the last open crosscut of the entry or room. All fire hoses shall be ready for operation during the mining through.
- g. Sufficient supplies of roof support and ventilation materials shall be available and located at the last open crosscut. In addition, an emergency plug and/or plugs shall be available in the immediate area of the cut through.
- h. The quantity of air required by the approved mine ventilation plan, but not less than 6,000 cubic feet of air per minute for scrubber equipped continuous miners or not less than 9,000 cubic feet per minute for continuous miner sections using auxiliary fans or line brattice only, shall be used to ventilate the working face during the mining through operation. The quantity of air required by the ventilation plan, but not less than 30,000 cfm, shall reach the working face of each future longwall during the mine-through operation.

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- i. Equipment shall be checked for permissibility and serviced on the shift prior to mining through the well.
- j. The methane monitor(s) on the continuous mining machine or the longwall shear and face shall be calibrated on the shift prior to mining through the well.
- k. When mining is in progress, tests for methane shall be made with a hand-held methane detector at least every 10 minutes from the time that mining with the continuous mining machine is within 30 feet of the well until the well is intersected and immediately prior to mining through. When mining with longwall mining equipment, the tests for methane shall be made at least every 10 minutes when the longwall face is within 10 feet of the well. During the actual cutting through process, no individual shall be allowed on the return side until mining through has been completed and the area has been examined and declared safe.
- l. When using continuous mining methods, the working place shall be free from accumulations of coal dust and coal spillages, and rock dust shall be placed on the roof, rib and floor to within 20 feet of the face when mining through or near the well on the shift or shifts during which the cut through will occur. On longwall sections rock dusting shall be conducted and placed on the roof, rib, and floor up to both headgate and tailgate gob.
- m. When the wellbore is intersected, all equipment shall be deenergized and the place thoroughly examined and determined safe before mining is resumed. Any well casing shall be removed and no open flame shall be permitted in the area until adequate ventilation has been established around the wellbore.
- n. After a well has been intersected and the working place determined safe, mining shall continue in by the well a sufficient distance to permit adequate ventilation around the area of the wellbore.

## Addendum to Part 3, A(6) American Energy Corporation

- o. No person shall be permitted in the area of the mining through operation except those actually engaged in the operation, company personnel, representatives of the miners, personnel from MSHA, and personnel from the appropriate State agency.
- p. The mining through operation shall be under the direct supervision of a certified official. Instructions concerning the mining through operation shall be issued only by the certified official in charge.
- q. MSHA personnel may interrupt or halt the mining through operation when it is necessary for the safety of the miners.
- r. A copy of the petition shall be maintained at the mine and be available to the miners.
- s. The Petitioner shall file a plugging affidavit setting forth the persons who participated in the work, a description of the plugging work, and a certification by the Petitioner that the well has been plugged as described.
- t. Within 60 days after this PDO becomes final, the Petitioner shall submit proposed revisions for its approved 30 CFR Part 48 training plan to the Coal Mine Safety and Health District Manager. These proposed revisions shall include initial and refresher training regarding compliance with the terms and conditions stated in the PDO.

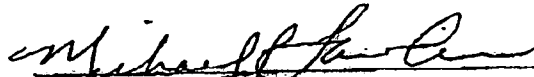
Any party to this action desiring a hearing on this matter must file in accordance with 30 CFR 44.14, within 30 days. The request for hearing must be filed with the Administrator for Coal Mine Safety and Health, 4015 Wilson Boulevard, Arlington, Virginia 22203.

If a hearing is requested, the request shall contain a concise summary of position on the issues of fact or law desired to be raised by the party requesting the hearing, including specific objections to the proposed decision. A party other than Petitioner who has requested a hearing shall also comment upon

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all issues of fact or law presented in the petition, and any party to this action requesting a hearing may indicate a desired hearing site. If no request for a hearing is filed within 30 days after service thereof, the Decision and Order will become final and must be posted by the operator on the mine bulletin board at the mine.

  
Michael J. Lawless  
Acting Administrator  
for Coal Mine Safety and Health

- (7) Will the proposed operation include return of slurry or other mine waste or material into the abandoned underground workings?

Yes ☐ No ☒ If "yes," comply with provisions contained in paragraph (N) of rule 1501:13-4-14 and paragraph (Q) of 1501:13-9-04 of the Administrative Code, and submit copies of the required MSHA approvals as an addendum.

## **B. RECLAMATION PLAN – GENERAL REQUIREMENTS**

- (1) Describe the plan for minimizing to the extent possible and using the best technology currently available disturbances and adverse impacts of the operation on fish and wildlife and related environmental values, including compliance with the Endangered Species Act, and achieving enhancement of such resources where practical.

The proposed longwall/room and pillar mining operations are not expected to impact fish, wildlife, and other related environmental values. Minnows have been found in some of the larger stream segments within the application area. However, the normal annual cycle shows that during the summer and fall months, when the stream flow is minimal, the minnows swim downstream, only to return again. Observations show that stream segments that go dry following subsidence have returned to near their normal flow, and will again support minnows. The larger streams will return to normal flow faster than smaller streams because more sediment is carried in larger streams and help fill any residual cracks that may be found. There are several ponds overlying the application area, and larger fish live in them. Our experience at the CENTURY MINE is that ponds are not greatly influenced by subsidence due to the amount of cover. Wildlife has never been shown to be affected by longwall mining. If surface slips are caused by mining activities, over the mining area, AMERICAN ENERGY CORPORATION will restore the land to a condition equal to its original value and reasonably foreseeable use. Undeveloped springs that are found above the application area may be dewatered and usually reposition themselves downstream. American Energy Corporation will replace undeveloped springs if they are legitimately used according to our water replacement plan. Room and pillar mining will have no effect on fish, wildlife, and related environmental values. No subsidence will occur.

## **C. RECLAMATION PLAN-PROTECTION OF HYDROLOGIC BALANCE**

- (1) Based on the baseline data submitted in response to Part 2, items B, C, D and other submitted information in this application, describe the probable hydrologic consequences of this proposed underground mining operation on the hydrologic regime of the proposed shadow area and adjacent areas. The description shall include findings on each of the following items:
- (a) The consequences of the proposed operation on the contents of dissolved and total suspended solids, total iron, total manganese and pH;



- (b) Whether adverse impacts may occur to the hydrologic balance;
- (c) The impact the proposed operation will have on:
  - i) Sediment yield from the disturbed area,
  - ii) Acidity, total suspended and dissolved solids and other important water quality parameters of local impact,
  - iii) Flooding or stream-flow alteration, ground water and surface water availability.

a)

The proposed longwall and room and pillar mining operation should have no impacts on the contents of total suspended solids, dissolved solids, acidity, or pH. Some of the wells located within the proposed permit area may exhibit increases in iron, manganese, and hardness post mining operation. Some springs within the proposed mining permit may exhibit increased iron, manganese, and hardness post mining. These increases are typically temporary and do not persist for a period longer than one year. The quality of the surface and ground water in the application area is not expected to be altered long term as a result of the proposed mining activities. The levels of pH, iron, manganese, total suspended solids, total suspended solids, and total dissolved solids are not expected to vary from the levels indicated in the submitted hydrologic inventory. However, these levels may temporarily be altered during and post mining.

b)

Aquifers in the proposed mining area strata normally have low yields and are less susceptible to mine subsidence fracturing. If fracturing should occur, the fractures will tend to close in response to lithologic pressures or be plugged by fine grain sediments containing clay that will swell when exposed to water. There is also vertical and horizontal variability in the rock strata. Rapid facies and hydrologic property changes limit the horizontal continuity of individual rock units. With the exception of persistent coal seams, few lithologic units are continuous across the proposed permit area. All of these factors tend to enhance the importance of localized flow systems. Most available ground water in this region is limited to the first 100' of the surface where enhanced permeability associated with rock fracturing is present. Ground water recharge in the upper ridge and ridge top areas of the site result in downward water migration within this shallow saturated zone. Due to topographic relief exceeding 100 feet between ridge tops, localized flow systems under the ridge tops are not hydrologically connected with adjacent ridge tops. Ground water under any ridge top can be considered continuous, but not across to other ridge tops. The overall hydrologic regime will not be affected, but some individual sources

of water may be de-watered by the proposed full recovery mining. Should a supply become affected by the mining operation, the supply will be supplemented by American Energy Corp at the company's expense by connecting the water user to another water supply.

Some changes in general water table levels and repositioning of hillside springs may result. Changes to the hydrologic balance in these areas will include moderate to long-term dewatering of developed springs. Static water levels of ground water users in the proposed permit area may be diminished or completely de-watered. Based on water bearing strata located in the test holes and field observations and sampling of developed water supplies, several aquifer zones have been identified and estimated in the proposed permit area. These aquifer zones can be located in the Ground Water Description in Part 2 Section C.

c)

(i) No impact to sediment yield will occur as a result of the proposed longwall mining operation.

(ii) The proposed underground longwall mining operation will have no impact on flooding. Minimum overburden in the proposed permit area is approximately 330 feet. It is expected that water flow in streams may be temporarily reduced over relatively short stream segments. Due to the local geology, as described in the geologic description in Part 2 Item B, any stream loss will not drain into the mine workings.

(iii) Over 60 developed water supplies, approximately 27 wells and approximately 36 springs, were identified and inventoried within the hydrologic boundary of the permit area. See the Hydrologic Inventory for a list of these supplies. Of the over 60 developed water supplies, approximately 24 wells and 30 springs are legitimately used.

- (2) Identify the extent to which the proposed underground mining operations, including subsidence impacts, may proximately result in contamination, diminution or interruption of an underground or surface supply of water within the proposed shadow area and adjacent areas which is used for domestic, agricultural, industrial or other legitimate use. If contamination, diminution or interruption may result, provide a description of alternative sources of water which could be developed to replace existing sources including information on water availability and suitability of alternative water sources for existing pre-mining uses and approved post-mining land uses. Furthermore, address the protection of the rights of present users of surface and ground water.

**Most of the developed water supplies in the proposed permit area are located within 200 feet of public roads. Over 60 developed water supplies, approximately 27 wells, and approximately 36 springs, were identified and inventoried within the hydrologic boundary of the permit area. See the Hydrologic Inventory for a list of these supplies. Of the over 60 developed water supplies, approximately 24 wells and approximately 30 springs are legitimately used. Groundwater sources within the shadow area may show some diminution or interruption during and after the mining operation due to subsidence, but may return to pre-mining conditions soon after the mining operation is completed. See Part 4, Item B (5) (c) for more information regarding well and spring impacts from subsidence. There is no documentation of successful spring development or pond construction.**

**Due to the buffering capabilities of the local strata, contamination of water sources will not occur.**

**Springs that are interrupted or diminished by the subsidence may return or reappear naturally at a lower elevation due to subsidence lowering the elevations of aquifer zones. If re-located spring is not on the original property or post-mining discharge is less than pre-mining, water supply replacement will be done.**

**Please refer to the addendum to Part 3 Item C (2) for information regarding protection of rights and water supply replacement methods**

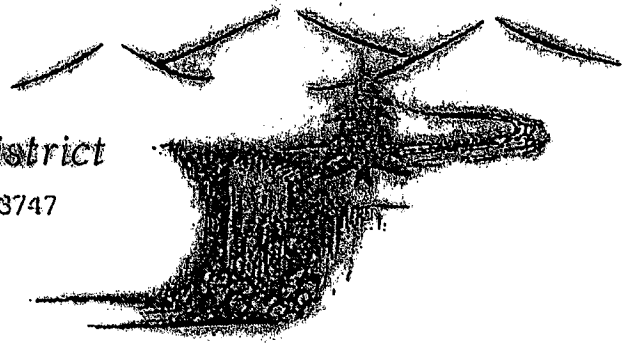
- (3) Is the application within 1,000 feet of an Ohio Source Water Protection Area?  
Yes ☐ No ☒ If "yes," indicate the name of the protection area. Describe activities that are potentially harmful to public water supplies and address mitigation of, and alternatives, to such activities. Identify the protection area on the Hydrology Map.

Switzerland of Ohio Water District

51746 MAIN ST.  
P.O. BOX 26

JERUSALEM, OHIO 43747

Phone 740-926-1465



December 22, 2009

Jim Chuckery  
Jack A. Hamilton & Associates, Inc.  
Consultants for AEC  
342 High Street  
Box 471  
Flushing, OH 43977

In response to your letter of December 9, 2009, we have the capacity to furnish water within your proposed permit area. If there are any new extensions to the current District service, they would have to be made to our specifications if we would supply water to that area.

Rogar E. Hendershot  
Board President

CENTURY MINE  
PERMIT D-0425-14

ALTERNATIVE WATER SUPPLY INFORMATION

Adjacent Areas Above Full Recovery Mining

Notwithstanding its mining rights and without waiving any of its mining rights, where such diminution or interruption results from its mining, AMERICAN ENERGY CORPORATION (AEC) will repair or install a replacement source in the adjacent area at its own expense in a manner mutually satisfactory to AMERICAN ENERGY CORPORATION, the water user's pre-mining quantity and quality levels which will be determined by monitoring information gathered in accordance with the Monitoring Plan.

1. The steps used by AMERICAN ENERGY CORPORATION that determine that damage has occurred are completed;
2. On a site-specific basis, re-drill existing wells (there is no evidence to indicate that this method of water replacement is a viable option in this area), drill new wells, or connect the water user to public water supplies (if no public water supply exists, AMERICAN ENERGY CORPORATION may install a line of sufficient size to service those affected by AEC's mining operation);
3. On a site specific basis, developed springs will be replaced by a farm pond built according to accepted engineering practices, drilling of a new well, development of another spring to close proximity to the original spring, or connect the water user to public water supplies (if no public water supply exists, AEC may install a line sufficient size to service those affected by AEC's mining operation);
4. Repair damaged farm ponds so as to be comparable to their pre-mining conditions;
5. Install an interim water supply until affected water supplies are replaced. Interim supplies may include hauled water or a tap to public water. AMERICAN ENERGY CORPORATION will only install temporary, replacement water using a public water supply if it can be connected within 48 hours. AMERICAN ENERGY CORPORATION will use the local fire department to haul county water for temporary replacement supplies. The local fire department can haul water within a matter of hours after receiving a request. Temporary tanks and water troughs for livestock are kept in stock to facilitate quick installations.

6. Such other proven, cost effective, and reasonable techniques as AMERICAN ENERGY CORPORATION may now, or in the future, deem appropriate.

It is AEC's intention to bear the cost of the installation of both interim and permanent replacement of developed water sources being used at the time of undermining. A temporary inactive supply undergoing repair or maintenance, or used as a backup supply is considered a used supply, as well as any source that has been fully developed (i.e., water delivery system and drinking facilities) and is well maintained such that it is usable at the time of undermining. If contamination, diminution, or interruption of a water user's ground or surface water supply used occurs as a proximate result of the mine's operation, AMERICAN ENERGY CORPORATION will repair such water supply or install a replacement supply at AEC's expense. AMERICAN ENERGY CORPORATION will not be responsible for nondeveloped sources.

AMERICAN ENERGY CORPORATION will install, at AMERICAN ENERGY CORPORATION'S expense, an alternate water supply system (within 48 hours) to be used until repair or replacement is completed or will reimburse the water user for the reasonable cost of obtaining a water supply from the date of any such contamination, diminution, or interruption until the supply is repaired or replaced. In cases where temporary water cannot be provided within 48 hours, AMERICAN ENERGY CORPORATION will immediately notify the Chief of the Division of Mineral Resources Management who will determine if the circumstances warrant an extension of the 48 hours.

AMERICAN ENERGY CORPORATION will provide the affected water user with no less of an available water supply than the water user had before mining, based on the premining measurements. If required, AMERICAN ENERGY CORPORATION will notify the Division of Mineral Resources Management immediately after it has been informed of the loss of developed water (ground or surface water) due to its mining activities.

As previously stated, the elevation of alternative water sources is unpredictable until the water system in the area again attains equilibrium after mining. Therefore, the alternative water supplies to be developed will be identified when the need arises.

Those supplies may include but not be limited to redevelopment of an existing well, spring, or pond, or replacement of the source with the County Water System. The County Water System has been contacted by AMERICAN ENERGY CORPORATION and has assured us that there is capacity to replace each developed source with county water.

If a water user believes that his or her underground or surface water source has been contaminated, diminished, or interrupted as a proximate result of the mine's operation, he or she

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should notify AMERICAN ENERGY CORPORATION by calling (740) 926-9152. AMERICAN ENERGY CORPORATION will make a determination of liability no later than sixty (60) days after notification of the contamination, diminution, or interruption of a water supply as a proximate result of the mine's operation.

Work on installing a temporary alternate water supply will be complete within 48 hours (unless an extension of the 48 hour time frame is granted by the Chief) after AEC learns of the contamination, diminution, or interruption to a water supply proximately caused by the mining operation. AMERICAN ENERGY CORPORATION will pay for installation costs only for a temporary, alternate water supply. Permanent repair or the installation of a replacement water supply for an affected water supply shall be completed no later than thirty (30) days after it has been determined that the supply has been contaminated, diminished, or interrupted as a proximate result of the mine's operation. The costs of repair of the original water supply and/or the installation of a replacement supply system to provide the affected water user with no less of an available water supply than was being used before mining, based on the premining measurements, shall be paid for by AMERICAN ENERGY CORPORATION. If the water user opts to do so, he may install his own temporary water supply system. AMERICAN ENERGY CORPORATION will reimburse the water user for the costs of installing a temporary water supply system.

In repairing or replacing a water user's ground or surface water supply which is damaged as a proximate result of the mine's operation, AMERICAN ENERGY CORPORATION's first preference is to repair the affected supply system. If that is neither effective nor feasible, AMERICAN ENERGY CORPORATION's second preference is to replace the affected supply system with a like supply system.

It should be recognized that property sites differ in such elements as geologic and hydrologic composition. Thus, the determination of whether replacement by a specific type of water supply system is feasible must be made on a case-by-case, site specific basis by AMERICAN ENERGY CORPORATION, in the past, has always attempted to consult and negotiate with the affected water user concerning the selection of the type of water replacement system and its site. This is done at the request of water users who prefer this procedure to that of AMERICAN ENERGY CORPORATION making unilateral decisions about replacement supplies and sites. However, AMERICAN ENERGY CORPORATION if required by the Division of Mineral Resource Management, will make these decisions unilaterally.

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In some cases, AMERICAN ENERGY CORPORATION reaches presubsidence agreements with water users, who are normally represented by counsel and in all cases, have full opportunity to consult with counsel or anyone else of their choosing. These agreements, which are typically negotiated by AMERICAN ENERGY CORPORATION employees, normally cover all potential damage claims. In situations where as such an agreement is reached, AMERICAN ENERGY CORPORATION will comply with the water replacement terms contained in the agreement. Such an agreement will satisfy, at a minimum, this permit and O.R.C. 1513.162.

In any situation where AMERICAN ENERGY CORPORATION determines that the contamination, diminution, or interruption of a water supply was not proximately caused by the mining operation, based on evidence such as the proximity of the supply to the mining operation, site specific geologic and surface conditions, or climatological conditions, AMERICAN ENERGY CORPORATION will provide the Division of Mineral Resources Management with notice of its determination and the proof in support of that determination to allow the Division of Mineral Resource Management to issue a Chief's Order deciding the issue. This Chief's Order is then appealable in accordance with O.R.C. 1513.13. If it is determined that contamination, diminution, or interruption of a supply is the proximate result of the mine's operation, AMERICAN ENERGY CORPORATION shall bear the costs of installing temporary water system. AMERICAN ENERGY CORPORATION reserves the right to proceed against the water user to recover costs incurred if it is determined that AMERICAN ENERGY CORPORATION is not liable for the contamination, diminution, or interruption of the affected water supply.

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## **D. GROUND WATER AND SURFACE WATER MONITORING PLAN**

Based upon the probable hydrologic consequences determination and analysis of all baseline hydrologic, geologic and other information submitted in this application, describe the plan for collection, recording and reporting of all surface and ground water quality and quantity monitoring data, including data collected for the NPDES program.

### **GROUND WATER AND SURFACE WATER MONITORING PLANS**

#### **1. Ground Water Monitoring Plan**

All legitimately developed, used ground water supplies will be monitored quarterly for quality and monthly for quantity for at least one year prior to full recovery mining, and at least one year subsequent to mining unless access is denied by the land owner. This monitoring will include wells and springs used for domestic purposes. Weekly quantity monitoring will be conducted whenever the longwall face is within three weeks of undermining the supply and no less than three weekly pre-mining and post-mining measurements will be made. Ground water supplies located within 500 feet (measured horizontally) of the perimeter of the active longwall panel will be monitored as if they were located on the panel. Monitoring will be continued for at least one year subsequent to full recovery mining contingent upon review by the Division of Mineral Resources Management. Daily precipitation data will be submitted quarterly to evaluate spring flow.

#### **2. Surface Water Monitoring Plan**

Various surface water locations depicted on the Application/Hydrology map will be sampled monthly for flow and quarterly for quality. The quality requirements of OAC 1501:13-3-14(F)(2) and the other QMR parameters as stated on the QMR report sheets will apply to the surface water analysis. Each surface monitoring station will be monitored for at least one year prior to full recovery mining. Monitoring will be continued for at least one year subsequent to full recovery mining contingent upon review by the Division of Mineral Resources Management. Daily precipitation data will be submitted quarterly to evaluate stream flow.

With each quarterly monitoring report of ground and surface water, a map depicting the progression of the longwall face will be attached to indicate the sampling points in the full recovery areas. Notes will be submitted indicating the position relative to the longwall face, with "+" indicating the station is in advance of the face and "-" indicating a position behind the face. An attempt will be made to monitor and sample as outlined above, however, some sources may not be accessible. These locations, if encountered, will be documented in the quarterly reports. All samples will be taken as outlined to the extent that existing well construction allows. Any samples that are unobtainable will be documented as such in the quarterly report. Quarterly sampling will include analysis for nitrates.

**AMERICAN ENERGY CORPORATION will monitor all ground and surface locations in accordance with the quarterly monitoring plan outlined above**

regardless of the saturated zones that they access. All developed supplies have been identified and have been indicated on the Application/Hydrology map.

**E. COAL MINING NEAR UNDERGROUND MINES**

- (1) Will mining operations within this application area be conducted within five hundred feet of an active underground mine or known abandoned underground mine?  
Yes ☐ No ☒ If "yes", MSHA approval is required.

- (2) If "yes" to item E (1), will the mining operations result in improved resource recovery, abatement of water pollution or elimination of hazards to the health and safety of the public?  
Yes ☐ No ☐ If "yes," check appropriate blank.

- ☐ Resource recovery  
☐ Abatement of water pollution  
☐ Elimination of hazards

- (3) Provide documentation that the remaining barrier will be sufficient to prevent failure with respect to the level of flooding in the adjacent underground mine.

**This adjacent area is an extension of the active mining operations.**

## **PART 4: UNDERGROUND MINING PLAN**

### **A. SUBSIDENCE CONTROL SURVEY**

- (1) Is this a full coal recovery operation?
- Yes ☒ No ☐ If "yes," complete Pre-Subsidence Inventory and items B (2) and (3).
- (2) Does the shadow area contain any of the structures or facilities listed in 1501:13-12-03(J)(1-3)?
- Yes ☒ No ☐ If "yes," complete Subsidence Control - Protection of Specific Structures, and specifically identify the structures or facilities on the application map.
- (3) Are any aquifers or bodies of water that serve as a significant water source for any public water supply system present in the shadow area?
- Yes ☐ No ☒ If "yes," complete Subsidence Control - Protection of Specific Structures, and specifically identify the areas on the application map.

### **B. SUBSIDENCE CONTROL PLAN**

- (1) Describe the method of coal removal, and indicates the size, sequence, and timing of the development of the underground workings.
- Longwall(full recovery), Room and Pillar; see Addenda to Part 3, A(1) and Part 4, B(1) Structure Contour, Timing, Coal Parcel map; see note to Part 4, B(1) Mining Plan.**
- (2) Utilizing the application map, specifically indicate areas where planned subsidence mining methods (i.e. longwall or pillar extraction) will be used.
- (3) Utilizing the application map, specifically indicate room-and-pillar mining areas where subsidence will be prevented or minimized.
- (4) For those areas mapped as room-and-pillar mining, provide the following information:
- (a) The maximum and average overburden thickness.
- Maximum = 560 feet; Average = 396'**
- (b) The projected maximum extraction ratios for mains, submains, and butt sections, as well as the existing ranges of values for the same areas.
- 51%**

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PRE-SUBSIDENCE INVENTORY**

**Applicant's Name: American Energy Corporation – D-0425-14 Beallsville**

Surface Owner	County	Township/Section	Renewable Resources	Structures-Use	Map Loc. Key (Structures)
I. Campbell	Monroe	Sunbury / 12		T.R. 1011	14-29
"	"	"	Dev. Springs	House	DS-29.01
"	"	"	Pond	Garage	P-29.03
"	"	"	Streams	2 – Barns	U-8D, U-8D-1
"	"	"	Pasture	Silo	Public Water (Tap not used)
"	"	"	Woodland		
"	"	"	Cropland		
W. & B. Reed II	Monroe	Sunbury / 6 & 12		SR. 145	14-34
"	"	"	Dev. Springs	House	DS-34.04, DS-34.06, DS-34.08
"	"	"	"	4 Garages(Commercial)	DS-34.09, DS-34.10, DS-34.12
"	"	"	"	Pool	DS-34.13, DS-34.14, DS-34.15
"	"	"	Ponds	2 Sheds	P-34.01, P-34.03
"	"	"	"	T.R. 1011	P-34.05, P-34.07, P-34.11
"	"	"	Streams	Barn	D-8E, D-8F
"	"	"	Pasture	Garage	
"	"	"	Woodland		

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PRE-SUBSIDENCE INVENTORY**

**Applicant's Name: American Energy Corporation – D-0425-14 Beallsville**

Surface Owner	County	Township/Section	Renewable Resources	Structures-Use	Map Loc. Key (Structures)
W. & B. Reed II (Cont.)	Monroe	Sunbury/6 & 12	Cropland		14-34
J. Palmer Jr.	Monroe	Sunbury/12		T.R. 1011	14-35
"	"	"	Stream	House, Shed	D-8D
"	"	"	Well	Garage, Pool	W-35.00
R. & P. Reed	Belmont	Wayne/7		T.R. 804	14-39
D. & P. Lucas	Belmont	Wayne/7	Undeveloped Spring	T.R. 1011	14-40
"	Monroe	Sunbury/12	Stream	House	U-8G, D-8G
"			Pond	Garage	P-40.03
"			Developed Springs	Barn	DS-40.04, DS-40.00
"			Well		W-40.01
"			Dug Well		DW-40.02
P. Crum	Belmont	Wayne/1		S.R. 145	14-47
"	"	"	Well	House	WL-47.00
"	"	"	Pasture	Garage	Public Water
"	"	"	Woodland	3- Sheds, Barn	
"	"	"	Stream		D-8, D-8H

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PRE-SUBSIDENCE INVENTORY**

**Applicant's Name: American Energy Corporation – D-0425-14 Beallsville**

Surface Owner	County	Township/Section	Renewable Resources	Structures-Use	Map Loc. Key (Structures)
W. & A. Doughty	Belmont	Wayne/1 & 7	(2) Undev. Springs	S.R. 145	14-48
"	"	"	Developed Springs	House	DS-48.00, DS-48.01, DS-48.02
"	"	"		Barn	
"	"	"		Shed	Public Water
"	"	"			
T. & C. Holland	Belmont	Wayne/ 1		S.R. 145	14-49
"	"	"		House	Public Water
"	"	"		Garage	
"	"	"		Pool	
D. Anderson	Monroe	Sunsbury/ 6		T.R. 2787	14-51
"	"	"		House	Public Water
J. & C. Hranko	Monroe	Sunsbury/ 6		T.R. 2787	14-52
"	"	"		House	Public Water
"	"	"		Shed	
M. Lucas (Stewart)	Monroe	Sunsbury/ 6		S.R. 145, T.R. 2278	14-53
"	"	"	Well	2 – Houses, Shed	W-53.00
"	"	"			Public Water

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PRE-SUBSIDENCE INVENTORY**

**Applicant's Name:** American Energy Corporation – D-0425-14 Beallsville

Surface Owner	County	Township/Section	Renewable Resources	Structures-Use	Map Loc. Key (Structures)
R. & A. Palmer	Monroe	Sunsbury/ 6		S.R. 145, T.R. 2787	14-54
"	"	"		House, Garage	Public Water
R. & M. Turner	Monroe	Sunsbury/ 6		S.R. 145, House	14-55
"	"	"		2 – Sheds, Pool	Public Water
A. & M. Patch	Monroe	Sunsbury/ 6		T.R. 2787	14-56
"	"	"		House, 2 - Sheds	Public Water
K. & C. Kanzigg	Monroe	Sunsbury/ 6		T.R. 2787	14-57, 14-58
"	"	"		House, Shed	Public Water
R. & C. Stephen	Monroe	Sunsbury/ 6		House	14-59
"	"	"			Public Water
R. & M. Turner	Monroe	Sunsbury/ 6		S.R. 145	14-60
"	"	"	Stream		U-8F
R. & S. Darby	Monroe	Sunsbury/ 6	Undeveloped Spring	S.R. 145	14-61
"	"	"		House, Pool	Public Water
"	"	"		Garage, Shed	

**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PRE-SUBSIDENCE INVENTORY**

**Applicant's Name: American Energy Corporation – D-0425-14 Beallsville**

Surface Owner	County	Township/Section	Renewable Resources	Structures-Use	Map Loc. Key (Structures)
S. & W. Jarrett	Belmont	Wayne/ 1		S.R. 145	16-62
"	Monroe	Sunsbury/ 6	Stream	House	U-9D
"			Developed Springs	Garage, Barn	DS-62.01, DS-62.02, DS-62.03, DS-62.04
"			Well	4 - Sheds	WL-62.00
Belmont Ridge Christian Church	Monroe	Sunsbury/ 6		S.R. 145	14-63
"	"	"		House Trailer (Residential)	Public Water
L. & A. Ice	Monroe	Sunsbury/ 6		S.R. 145	14-64
"	"	"	Well	House, Garage	W-64.00
"	"	"		Shed	Public Water
C. & P. Roach Sr.	Monroe	Sunsbury/ 6		S.R. 145	14-65
"	"	"		House	Public Water
"	"	"		Garage	
"	"	"		Shed	



**OHIO DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF MINERAL RESOURCES MANAGEMENT**

**PRE-SUBSIDENCE INVENTORY**

**Applicant's Name: American Energy Corporation – D-0425-14 Beallsville**

Surface Owner	County	Township/Section	Renewable Resources	Structures-Use	Map Loc. Key (Structures)
R. & T. Jarrett	Belmont	Wayne/ 1	Undeveloped Spring	S.R. 145	14-66
"	"	"	Pond	House	P-66.00
"	"	"	Developed Spring	Garage	DS-66.00
"	"	"	Stream		U-9E, D-9E
H. & R. Brooks	Belmont	Wayne/ 1		T.R. 82	14-68
"	"	"		House	Public Water
"	"	"	Well		W-181A
B. Mellott	Monroe	Sunbury/ 6			14-69
"	"	"	Developed Spring		DS-69.01
"	"	"	Well		W-69.00
"	"	"	Streams		D-9B, D-9C, D-9D
N. Lucas	Belmont	Wayne/ 1		T.R. 82	14-78
"	"	"	Developed Spring		DS-78.01
"	"	"	Well		W-78.02
G. & P. Hoover Jr.	Monroe	Sunbury/ 6			14-80
"	"	"			Public Water
R. & C. Loudon	Belmont	Wayne/ 1	"	S.R. 145, T.R. 82	14-65

Revised 05/08  
DNR-744-9044

## PRE-SUBSIDENCE INVENTORY

**Applicant's Name: American Energy Corporation – D-0425-14 Beallsville**

[illegible]

## Addendum to Part 4, A(2)

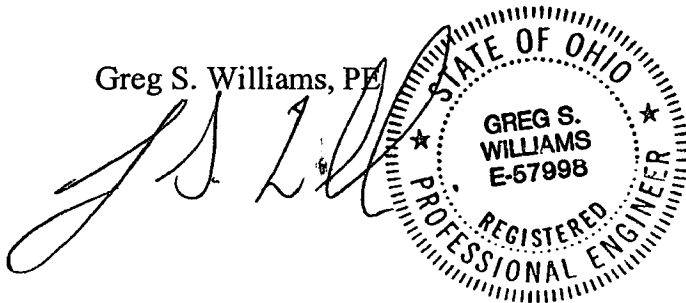
There are two Impoundments on the Reed property, P-34.11 and P-34.12, which are presently more than 20 acre-feet in volume. The form for Subsidence Control – Protection of Specific Structures is not needed as there is a plan to modify the impoundments to a volume of less than 20 acre-feet to remove them as qualifying structures.

Reed has agreed to modify the impoundments to a volume of less than 20 acre-feet by lowering the principal spillway to an elevation that will impound a volume of less than 20 acre-feet. This construction modification will be performed by Reed's own construction company and will occur within the next six months before mining activities occur in the immediate area. No longwall mining will occur within 250' of either of these impoundment footprints until the modification work is done. This does not exclude conventional mining with room and pillar taking place for development.

The Construction Modification Plan is based on surveys of the pre-construction and post construction topography of the ponds and embankments. Stage Storage calculations have been made to determine current volumes as well as the final elevation necessary to impound less than 20 acre-feet. The principal spillway elevation of each respective pond spillway is known

The Applicant is requesting a conditional issuance of the permit contingent upon the completion of this work to the satisfaction of the Division. Upon completion, a certified engineer's statement will be provided to the Division certifying that the impoundment is less than 20 acre-feet in volume including a plan survey exhibit and stage storage calculations.

Greg S. Williams, PE



- (c) Projected maximum width of entries and cross cuts throughout the mine, as well as the existing ranges of values for the same areas.

**18 feet for projected maximum width and existing range of values**

- (d) The center spacing for entries and cross cuts.

**All entries will be driven on 86.6 foot centers; cross cuts will be driven on 55 foot centers.**

- (e) Minimum pillar dimensions for mains, submains, and butt sections, as well as the existing ranges of values for these areas.

**30' x 79' @ 60 degrees; 47' x 60' @ 45 degrees; 47' x 64' @ 60 degrees; 47' x 67' @ 90 degrees**

**37' x 68.6' for room and pillar @ 60 degree crosscut**

**47' x 67' for mains @ 90 degree and 45 degree crosscuts**

- (f) The barrier pillar width between butt sections, as well as the existing ranges of values for the same areas.

**68 feet between butt sections.**

- (g) The engineering properties of the clay/shale, or other soft rock material in the roof and floor of the mine under both saturated and natural moisture conditions.

**The unconfined compressive strength of the claystone roof is 2620 to 3939 psi; and shale to calcareous shale floor is 2995 to 12,590 psi. The unit weight is 145 to 150 pounds/cubic foot for above cited rock types. Cohesion and friction angle have never been measured.**

**The Century Mine is a dry mine, with nearly all of the water that is found underground resulting from the mining process. There is no water pumped outside from the active mining areas of the mine, although some water is pumped from the bottom of airshafts. This water is essentially ground water collected behind the lining of the shaft. Therefore, water is not expected to impact the roof, floor, or coal strata. This condition is expected to continue indefinitely. If water does inundate the mine at some time in the future, it is not expected to cause ground control problems due to the large size of the pillars that will remain.**

- (h) Measures to be taken on the surface to prevent damage or lessening of the value or reasonably foreseeable use of the surface, if any.

**In order to prevent damage to the surface, pillars with safety factors greater than 2.0 will be utilized, and no pillar extraction will take place.**

- (i) The minimum pillar safety factor, for protected structures, based upon coal strength and load.

WILLIAM J. SIPLIVY, P.E., INC.

Mining Engineer and Geologist

24 December 2008

Mr. Dennis Dubiel  
Environmental Engineer  
American Energy Corporation  
43521 Mayhugh Hill Road  
Beallsville, Ohio 43716

RE: Pillar Stability Analysis, ODNR Application D-0425-14

Dear Mr. Dubiel:

At your request, a coal pillar stability analysis was made for development mining proposed in Application D-0425-14 for American Energy Corporation's Century mine. The mining plan considered consists of gate and main entry development shown in the six possible projections on Figure 1. All entries are to be driven 18 feet wide, maximum, on 65 foot centers. Cross-cuts are to be driven 18 feet wide, maximum, on 85 foot centers, turned at 45, 60 or 90 degree angles. Mining height is 7.0 feet. Maximum overburden thickness is 555 feet.

Gate Entries

There are three gate entry projections being considered (Projections A, B and C). All are three entry systems. Projections A, B and C have cross-cuts turned on 45, 60 and 90 degree angles, respectively. The corresponding extraction rates are 49, 45 and 43 percent.

Main Entries

There are three main entry projections being considered (Projections D, E and F). All are six entry systems. Projections D, E and F have cross-cuts turned on 45, 60 and 90 degree angles, respectively. The corresponding extraction rates are 49, 45 and 43 percent.

Stability Analysis

The stability analysis was made using the NIOSH, ARMPS 5.0.43 program. A compressive strength of 900 psi was used for the Pittsburgh No. 8 coalbed, per the recommendation of MSHA, District 3, Morgantown, West Virginia.


The calculated ARMPS stability factors are summarized in Table 1. The results are as follows: Projections A and D had a stability factor of 2.34; Projections B and E had a stability factor of 2.66; and Projections C and F had a stability factor of 2.81. Calculation sheets are attached.

Stable pillars are expected for all six mining projections analyzed due to the stability factor being greater than 2 and a mining extraction rate, in each case, of less than 50 percent.

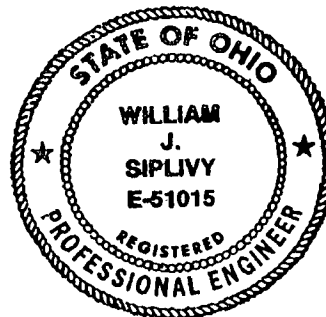
Please let me know if there are any questions.

Respectfully submitted,

William J. Siplivy, P.E., Inc.



William J. Siplivy, P.E., C.P.G.  
President



WILLIAM J. SIPLIVY, P.E., INC.

Mining Engineer and Geologist

25 February 2009

Mr. Dennis Dubiel  
Environmental Engineer  
American Energy Corporation  
43521 Mayhugh Hill Road  
Beallsville, Ohio 43716

RE: Pillar Stability Analysis, ODNR Application D-0425-14

Dear Mr. Dubiel:

At your request, a coal pillar stability analysis was made for continuous miner development proposed in Application D-0425-14 for American Energy Corporation's Century mine. The mining plan consists of room-and-pillar development as projected in Figure 1. In this plan, five entries are to be driven 18 feet wide, maximum, on 55 foot centers. Cross-cuts are to be driven 18 feet wide, maximum, on 86.6 foot centers. Cross-cuts are to be turned on 60 degree angles. Mining height is 6.0 feet. Maximum overburden thickness is 560 feet. The extraction ratio is 51 percent. Mining is restricted to development only. There will be no pulling of pillars or retreat mining.

Stability Analysis

The stability analysis was made using the NIOSH, ARMPS 5.0.43 program. A compressive strength of 900 psi was used for the Pittsburgh No. 8 coalbed, per the recommendation of MSHA, District 3, Morgantown, West Virginia.

The calculated ARMPS stability factor is 2.09. Calculation sheets are attached.

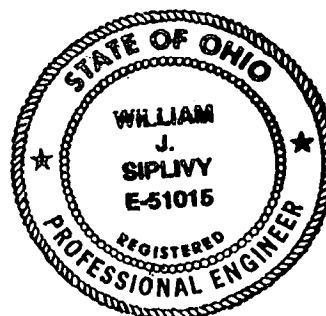
Stable pillars are expected due to a stability factor greater than 2. This is considered adequate here for mine development having short term life

Please let me know if there are any questions.

Respectfully submitted,

William J. Siplivy, P.E., Inc.

*William J. Siplivy*  
William J. Siplivy, P.E., C.P.G.  
President



# Addendum to Part 4, Item B(4)(i), American Energy Corporation

ARMPS, 2/23/2009, 12:09:41

Page: 1

ARMPS module build: 5.0.43  
Project File: UnTitled  
Input Units: (ft) (psi)

[PROJECT TITLE]  
CM Mining Section

[PROJECT DESCRIPTION]  
-14 Permit Area - 60 degree .

[DEVELOPMENT GEOMETRY PARAMETERS]  
Entry Height.....6 (ft)  
Depth of Cover.....560 (ft)  
Crosscut Angle.....60 (deg)  
Entry Width.....18 (ft)  
Number of Entries.....5  
Crosscut Spacing.....55 (ft)  
Center to Center Distance #1.....86.6 (ft)  
Center to Center Distance #2.....86.6 (ft)  
Center to Center Distance #3.....86.6 (ft)  
Center to Center Distance #4.....86.6 (ft)

[DEFAULT PARAMETERS]  
In Situ Coal Strength.....900 (psi)  
Unit Weight of Overburden.....162 (pcf)  
Breadth of AMZ.....118 (ft)  
AMZ set automatically

[RETREAT MINING PARAMETERS]  
Loading Condition.....DEVELOPMENT

[ARMPS STABILITY FACTORS]

DEVELOPMENT.....2.09

[DATA ABOUT THE ACTIVE MINING ZONE (AMZ)]

AMZ Width.....346.4 (ft)  
AMZ Breadth.....118.0 (ft)  
AMZ Area.....40875.2 (ft)\*(ft)  
Extraction Ratio Within AMZ.....0.51  
Development Load on AMZ.....1.85E+06 (tons)

TOTAL LOADINGS ON AMZ, INCLUDING TRANSFER FROM BARRIERS				
LOAD	ABUTMENT	LTRANSBAR	LTRANSREM	TOTAL
CONDITION	LOAD (tons)	(tons)	(tons)	(tons)
DEVELOPMENT	0.00E+00	0.00E+00	0.00E+00	1.85E+06

R-Factor for front abutment is the percent of the total front abutment load that is applied to the AMZ.

R-Factor for side abutment is the percent of the total side abutment load that is applied to the barrier pillar (the remainder is applied to the AMZ).

LTRANSBAR is the load transferred to the AMZ from the barrier pillar between the side and active gob if the barrier's SF is less than 1.5.

LTRANSREM is the load transferred to the AMZ from the remnant barrier between the side and active gob if the remnant's SF is less than 1.5.



# Addendum to Part 4, Item B(4)(i), American Energy Corporation

ARMPS, 2/23/2009, 12:09:41

Page: 2

## [PILLAR PARAMETERS]

PILLAR	ENTRY CENTER (ft)	MINIMUM DIMENSION (ft)	MAXIMUM DIMENSION (ft)
1	86.60	29.63	79.21
2	86.60	29.63	79.21
3	86.60	29.63	79.21
4	86.60	29.63	79.21

PILLAR	AREA (ft)*(ft)	STRENGTH (psi)	LOAD-BEARING CAPACITY (tons)
1	2.35E+03	2.68E+03	4.52E+05
2	2.35E+03	2.68E+03	4.52E+05
3	2.35E+03	2.68E+03	4.52E+05
4	2.35E+03	2.68E+03	4.52E+05

TOTAL LOAD-BEARING CAPACITY OF PILLARS WITHIN AMZ: 3.88E+06 (tons)

To view the distribution of Pillar Load Bearing Capacity  
select 'View Plots->Settings->Pillar Load Bearing Capacity'

## [BARRIER PILLAR PARAMETERS]

\*\*\*none\*\*\*

## [STRESS ON INDIVIDUAL PILLARS WITHIN THE AMZ]

DEVELOPMENT STRESSES.....1278 (psi)

AEC 09977

Addendum to Part 4, Item B(4)(i), American Energy Corporation

ARMPS: Actual Pillar Dimensions (width\*length, ft). Entries shown from left to right.

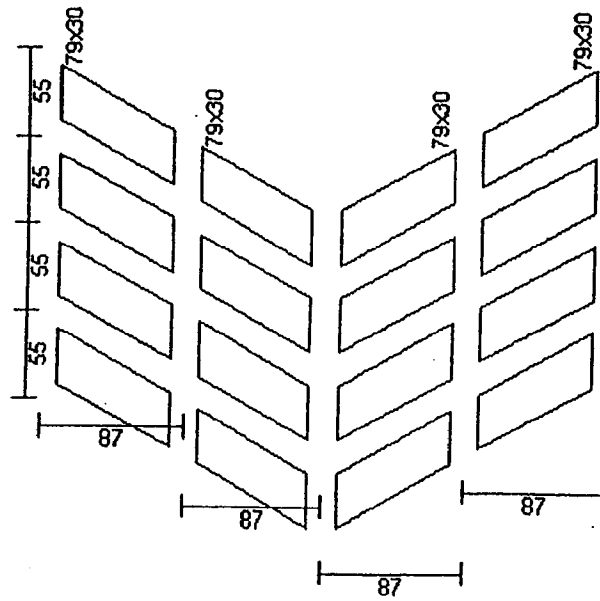
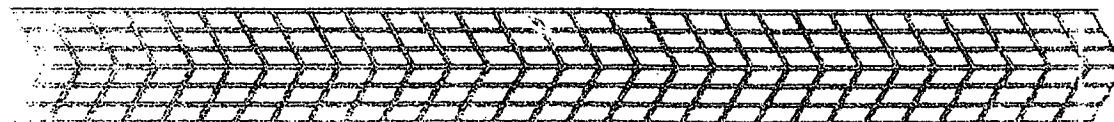


FIGURE I  
PROJECTION A  
APPLICATION: D-0425-14  
NOT TO SCALE



PROJECTION "A"

55x86.6 ROOMS

60 DEGREES

**Table 1**  
**Pillar Stability Analyses Summary**  
**American Energy Corporation - Century Mine**  
**ODNR Application : D-0425-14**  
**24 December 2008**

<u>Projection</u>	<u>Mining Designation</u>	<u>Number of Entries</u>	<u>Entry Width (ft.)</u>	<u>Entry Centers (ft.)</u>	<u>Cross-cut Centers (ft.)</u>	<u>Cross-cut Angle (deg.)</u>	<u>ARMPS Stability Factor</u>
A	Gates	3	18	65	85	45	2.34
B	Gates	3	18	65	85	60	2.66
C	Gates	3	18	65	85	90	2.81
D	Mains	6	18	65	85	45	2.34
E	Mains	6	18	65	85	60	2.66
F	Mains	6	18	65	85	90	2.81

**Notes:** Maximum overburden thickness 555 feet.  
Refer to Figure 1 for projection schematic.

# Addendum to Part 4, Item B(4)(i), American Energy Corporation

ARMPS, 12/23/2008, 07:58:00

Page: 1

ARMPS module build: 5.0.43  
Project File: Untitled  
Input Units: (ft) (psi)

[PROJECT TITLE]  
D-0425-14

[PROJECT DESCRIPTION]  
45 degree 3 entry gate

[DEVELOPMENT GEOMETRY PARAMETERS]  
Entry Height.....7 (ft)  
Depth of Cover.....555 (ft)  
Crosscut Angle.....45 (deg)  
Entry Width.....18 (ft)  
Number of Entries.....3  
Crosscut Spacing.....85 (ft)  
Center to Center Distance #1.....65 (ft)  
Center to Center Distance #2.....65 (ft)

[DEFAULT PARAMETERS]  
In Situ Coal Strength.....900 (psi)  
Unit Weight of Overburden.....162 (pcf)  
Breadth of AMZ.....117 (ft)  
AMZ set automatically

[RETREAT MINING PARAMETERS]  
Loading Condition.....DEVELOPMENT

[ARMPS STABILITY FACTORS]  
DEVELOPMENT.....2.34

[DATA ABOUT THE ACTIVE MINING ZONE (AMZ)]

AMZ Width.....130.0 (ft)  
AMZ Breadth.....117.0 (ft)  
AMZ Area.....15210.0 (ft)\*(ft)  
Extraction Ratio Within AMZ.....0.49  
Development Load on AMZ.....6.84E+05 (tons)

TOTAL LOADINGS ON AMZ, INCLUDING TRANSFER FROM BARRIERS					
LOAD	ABUTMENT	LTRANSBAR	LTRANSREM		TOTAL
CONDITION	LOAD (tons)	(tons)	(tons)		(tons)
DEVELOPMENT	0.00E+00	0.00E+00	0.00E+00		6.84E+05

R-Factor for front abutment is the percent of the total front abutment load that is applied to the AMZ.

R-Factor for side abutment is the percent of the total side abutment load that is applied to the barrier pillar (the remainder is applied to the AMZ).

LTRANBAR is the load transferred to the AMZ from the barrier pillar between the side and active gob if the barrier's SF is less than 1.5.

LTRANSREM is the load transferred to the AMZ from the remnant barrier between the side and active gob if the remnant's SF is less than 1.5.

[PILLAR PARAMETERS]

# Addendum to Part 4, Item B(4)(i), American Energy Corporation

ARMPS, 12/23/2008, 07:58:00

Page: 2

PILLAR	ENTRY CENTER (ft)	MINIMUM DIMENSION (ft)	MAXIMUM DIMENSION (ft)
1	65.00	42.10	66.47
2	65.00	42.10	66.47

PILLAR	AREA (ft)*(ft)	STRENGTH (psi)	LOAD-BEARING CAPACITY (tons)
1	2.80E+03	2.88E+03	5.81E+05
2	2.80E+03	2.88E+03	5.81E+05

TOTAL LOAD-BEARING CAPACITY OF PILLARS WITHIN AMZ: 1.60E+06 (tons)

To view the distribution of Pillar Load Bearing Capacity  
select 'View Plots->Settings->Pillar Load Bearing Capacity'

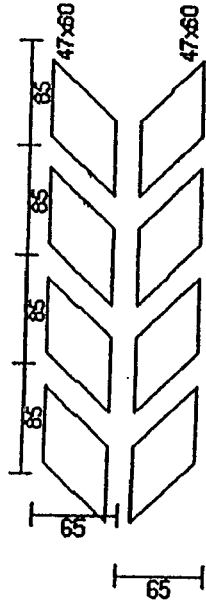
[BARRIER PILLAR PARAMETERS]  
\*\*\*none\*\*\*

[STRESS ON INDIVIDUAL PILLARS WITHIN THE AMZ]

DEVELOPMENT STRESSES.....1233 (psi)

Addendum to Part 4, Item B44(i), American Energy Corporation

AHWNS: Actual Pillar Dimensions (width, length, ft). Entries shown from left to right.



# Addendum to Part 4, Item B(4)(i), American Energy Corporation

ARMPS, 12/23/2008, 07:58:36

Page: 1

ARMPS module build: 5.0.43  
Project File: Untitled  
Input Units: (ft) (psi)

[PROJECT TITLE]  
D-0425-14

[PROJECT DESCRIPTION]  
60 degree 3 entry gate

[DEVELOPMENT GEOMETRY PARAMETERS]  
Entry Height.....7 (ft)  
Depth of Cover.....555 (ft)  
Crosscut Angle.....60 (deg)  
Entry Width.....18 (ft)  
Number of Entries.....3  
Crosscut Spacing.....85 (ft)  
Center to Center Distance #1.....65 (ft)  
Center to Center Distance #2.....65 (ft)

[DEFAULT PARAMETERS]  
In Situ Coal Strength.....900 (psi)  
Unit Weight of Overburden.....162 (pcf)  
Breadth of AMZ.....117 (ft)  
AMZ set automatically

[RETREAT MINING PARAMETERS]  
Loading Condition.....DEVELOPMENT

[ARMPS STABILITY FACTORS]  
DEVELOPMENT.....2.66

[DATA ABOUT THE ACTIVE MINING ZONE (AMZ)]

AMZ Width.....130.0 (ft)  
AMZ Breadth.....117.0 (ft)  
AMZ Area.....15210.0 (ft)\*(ft)  
Extraction Ratio Within AMZ.....0.45  
Development Load on AMZ.....6.84E+05 (tons)

TOTAL LOADINGS ON AMZ, INCLUDING TRANSFER FROM BARRIERS					
LOAD	ABUTMENT	LTRANSBAR	LTRANSREM		TOTAL
CONDITION	LOAD (tons)	(tons)	(tons)		(tons)
DEVELOPMENT	0.00E+00	0.00E+00	0.00E+00		6.84E+05

R-Factor For front abutment is the percent of the total front abutment load that is applied to the AMZ.

R-Factor for side abutment is the percent of the total side abutment load that is applied to the barrier pillar (the remainder is applied to the AMZ).

LTRANSBAR is the load transferred to the AMZ from the barrier pillar between the side and active gob if the barrier's SF is less than 1.5.

LTRANSREM is the load transferred to the AMZ from the remnant barrier between the side and active gob if the remnant's SF is less than 1.5.

[PILLAR PARAMETERS]

AEC 09984



**Addendum to Part 4, Item B(4)(i), American Energy Corporation**

ARMPS, 12/23/2008, 07:58:36

Page: 2

PILLAR	ENTRY CENTER (ft)	MINIMUM DIMENSION (ft)	MAXIMUM DIMENSION (ft)
1	65.00	47.00	64.22
2	65.00	47.00	64.22

PILLAR	AREA (ft)*(ft)	STRENGTH (psi)	LOAD-BEARING CAPACITY (tons)
1	3.02E+03	3.04E+03	6.61E+05
2	3.02E+03	3.04E+03	6.61E+05

TOTAL LOAD-BEARING CAPACITY OF PILLARS WITHIN AMZ: 1.82E+06 (tons)

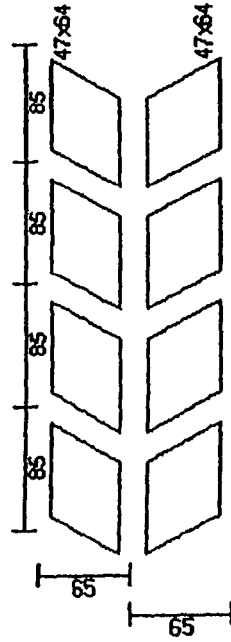
To view the distribution of Pillar Load Bearing Capacity  
select 'View Plots->Settings->Pillar Load Bearing Capacity'

[BARRIER PILLAR PARAMETERS]  
\*\*\*none\*\*\*

[STRESS ON INDIVIDUAL PILLARS WITHIN THE AMZ]

DEVELOPMENT STRESSES.....1143 (psi)

ARMPS Actual PMat Dimensions with length  
ARMPS: Actual PMat Dimensions (width length, ft). Entries shown from left to right



ARMPS, 12/23/2008, 07:59:11

Page: 1

ARMPS module build: 5.0.43  
 Project File: UnTitled  
 Input Units: (ft) (psi)

[PROJECT TITLE]  
 D-0425-14

[PROJECT DESCRIPTION]  
 90 degree 3 entry gate

[DEVELOPMENT GEOMETRY PARAMETERS]  
 Entry Height.....7 (ft)  
 Depth of Cover.....555 (ft)  
 Crosscut Angle.....90 (deg)  
 Entry Width.....18 (ft)  
 Number of Entries.....3  
 Crosscut Spacing.....85 (ft)  
 Center to Center Distance #1.....65 (ft)  
 Center to Center Distance #2.....65 (ft)

[DEFAULT PARAMETERS]  
 In Situ Coal Strength.....900 (psi)  
 Unit Weight of Overburden.....162 (pcf)  
 Breadth of AMZ.....117 (ft)  
 AMZ set automatically

[RETREAT MINING PARAMETERS]  
 Loading Condition.....DEVELOPMENT

[ARMPS STABILITY FACTORS]  
 DEVELOPMENT.....2.81

[DATA ABOUT THE ACTIVE MINING ZONE (AMZ)]

AMZ Width.....130.0 (ft)  
 AMZ Breadth.....117.0 (ft)  
 AMZ Area.....15210.0 (ft)\*(ft)  
 Extraction Ratio Within AMZ.....0.43  
 Development Load on AMZ.....6.84E+05 (tons)

TOTAL LOADINGS ON AMZ, INCLUDING TRANSFER FROM BARRIERS				
LOAD	ABUTMENT	LTRANSBAR	LTRANSREM	TOTAL
CONDITION	LOAD (tons)	(tons)	(tons)	(tons)
DEVELOPMENT	0.00E+00	0.00E+00	0.00E+00	6.84E+05

R-Factor for front abutment is the percent of the total front abutment load that is applied to the AMZ.

R-Factor for side abutment is the percent of the total side abutment load that is applied to the barrier pillar (the remainder is applied to the AMZ).

LTRANSBAR is the load transferred to the AMZ from the barrier pillar between the side and active gob if the barrier's SF is less than 1.5.

LTRANSREM is the load transferred to the AMZ from the remnant barrier between the side and active gob if the remnant's SF is less than 1.5.

[PILLAR PARAMETERS]

# Addendum to Part 4, Item B(4)(i), American Energy Corporation

ARMPS, 12/23/2008, 07:59:11

Page: 2

PILLAR	ENTRY CENTER (ft)	MINIMUM DIMENSION (ft)	MAXIMUM DIMENSION (ft)
1	65.00	47.00	67.00
2	65.00	47.00	67.00

PILLAR	AREA (ft)*(ft)	STRENGTH (psi)	LOAD-BEARING CAPACITY (tons)
1	3.15E+03	3.08E+03	6.97E+05
2	3.15E+03	3.08E+03	6.97E+05

TOTAL LOAD-BEARING CAPACITY OF PILLARS WITHIN AMZ: 1.92E+06 (tons)

To view the distribution of Pillar Load Bearing Capacity  
select 'View Plots->Settings->Pillar Load Bearing Capacity'

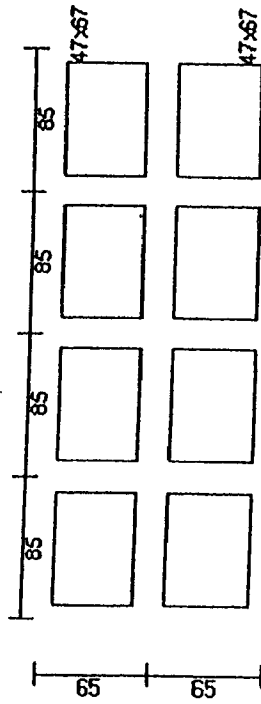
[BARRIER PILLAR PARAMETERS]  
\*\*\*none\*\*\*

[STRESS ON INDIVIDUAL PILLARS WITHIN THE AMZ]

DEVELOPMENT STRESSES.....1095 (psi)

# Addendum to Part 4, Item B(4)(i), American Energy Corporation

AHMPs: Actual Pillar Dimensions (width\*length, ft). Entries shown from left to right.



ARMPS, 12/23/2008, 07:59:47

Page: 1

ARMPS module build: 5.0.43  
Project File: Untitled  
Input Units: (ft) (psi)

[PROJECT TITLE]  
D-0425-14

[PROJECT DESCRIPTION]  
90 degree 6 entry main

[DEVELOPMENT GEOMETRY PARAMETERS]

Entry Height.....7 (ft)  
Depth of Cover.....555 (ft)  
Crosscut Angle.....90 (deg)  
Entry Width.....18 (ft)  
Number of Entries.....6  
Crosscut Spacing.....85 (ft)  
Center to Center Distance #1.....65 (ft)  
Center to Center Distance #2.....65 (ft)  
Center to Center Distance #3.....65 (ft)  
Center to Center Distance #4.....65 (ft)  
Center to Center Distance #5.....65 (ft)

[DEFAULT PARAMETERS]

In Situ Coal Strength.....900 (psi)  
Unit Weight of Overburden.....162 (pcf)  
Breadth of AMZ.....117 (ft)  
AMZ set automatically

[RETREAT MINING PARAMETERS]

Loading Condition.....DEVELOPMENT

[ARMPS STABILITY FACTORS]

DEVELOPMENT.....2.81

[DATA ABOUT THE ACTIVE MINING ZONE (AMZ)]

AMZ Width.....325.0 (ft)  
AMZ Breadth.....117.0 (ft)  
AMZ Area.....38025.0 (ft)\*(ft)  
Extraction Ratio Within AMZ.....0.43  
Development Load on AMZ.....1.71E+06 (tons)

TOTAL LOADINGS ON AMZ, INCLUDING TRANSFER FROM BARRIERS

LOAD	ABUTMENT	LTRANSBAR	LTRANSREM	TOTAL
CONDITION	LOAD (tons)	(tons)	(tons)	(tons)
DEVELOPMENT	0.00E+00	0.00E+00	0.00E+00	1.71E+06

R-Factor for front abutment is the percent of the total front abutment load that is applied to the AMZ.

R-Factor for side abutment is the percent of the total side abutment load that is applied to the barrier pillar (the remainder is applied to the AMZ).

LTRANSBAR is the load transferred to the AMZ from the barrier pillar between the side and active gob if the barrier's SF is less than 1.5.

LTRANSREM is the load transferred to the AMZ from the remnant barrier between the side and active gob if the remnant's SF is less than 1.5.

ARMPS, 12/23/2008, 07:59:47

Page: 2

[PILLAR PARAMETERS]

PILLAR	ENTRY CENTER (ft)	MINIMUM DIMENSION (ft)	MAXIMUM DIMENSION (ft)
1	65.00	47.00	67.00
2	65.00	47.00	67.00
3	65.00	47.00	67.00
4	65.00	47.00	67.00
5	65.00	47.00	67.00

PILLAR	AREA (ft)*(ft)	STRENGTH (psi)	LOAD-BEARING CAPACITY (tons)
1	3.15E+03	3.08E+03	6.97E+05
2	3.15E+03	3.08E+03	6.97E+05
3	3.15E+03	3.08E+03	6.97E+05
4	3.15E+03	3.08E+03	6.97E+05
5	3.15E+03	3.08E+03	6.97E+05

TOTAL LOAD-BEARING CAPACITY OF PILLARS WITHIN AMZ: 4.80E+06 (tons)

To view the distribution of Pillar Load Bearing Capacity  
select 'View Plots->Settings->Pillar Load Bearing Capacity'

[BARRIER PILLAR PARAMETERS]

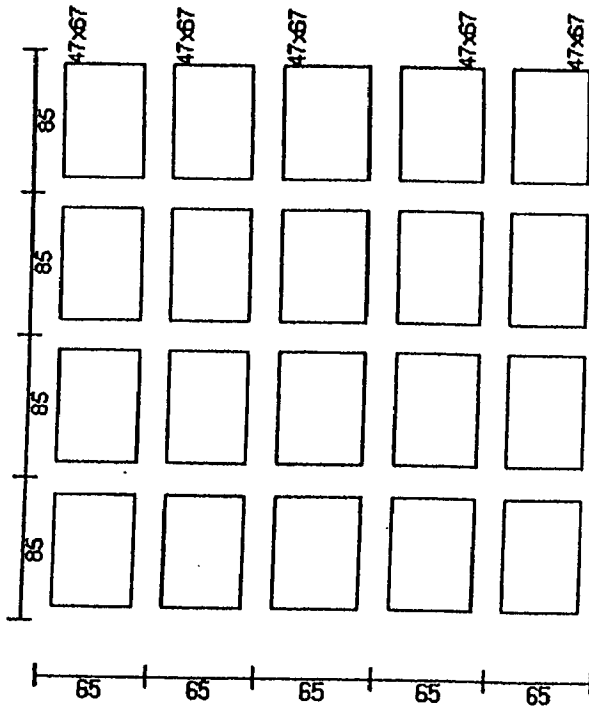
\*\*\*none\*\*\*

[STRESS ON INDIVIDUAL PILLARS WITHIN THE AMZ]

DEVELOPMENT STRESSES.....1095 (psi)

# Addendum to Part 4, Item B(4)(i), American Energy Corporation

AHMP's: Actual Pillar Dimensions (width\*length, ft). Entries shown from left to right.





# Addendum to Part 4, Item B(4)(i), American Energy Corporation

ARMPS, 12/23/2008, 08:00:18

Page : 1

ARMPS module build: 5.0.43  
Project File: Untitled  
Input Units: (ft) (psi)

[PROJECT TITLE]  
D-0425-14

[PROJECT DESCRIPTION]  
60 degree 6 entry main

[DEVELOPMENT GEOMETRY PARAMETERS]  
Entry Height.....7 (ft)  
Depth of Cover.....555 (ft)  
Crosscut Angle.....60 (deg)  
Entry Width.....18 (ft)  
Number of Entries.....6  
Crosscut Spacing.....85 (ft)  
Center to Center Distance #1.....65 (ft)  
Center to Center Distance #2.....65 (ft)  
Center to Center Distance #3.....65 (ft)  
Center to Center Distance #4.....65 (ft)  
Center to Center Distance #5.....65 (ft)

[DEFAULT PARAMETERS]  
In Situ Coal Strength.....900 (psi)  
Unit Weight of Overburden.....162 (pcf)  
Breadth of AMZ.....117 (ft)  
AMZ set automatically

[RETREAT MINING PARAMETERS]  
Loading Condition.....DEVELOPMENT

[ARMPS STABILITY FACTORS]  
DEVELOPMENT.....2.66

## [DATA ABOUT THE ACTIVE MINING ZONE (AMZ)]

AMZ Width.....325.0 (ft)  
AMZ Breadth.....117.0 (ft)  
AMZ Area.....38025.0 (ft)\*(ft)  
Extraction Ratio Within AMZ.....0.45  
Development Load on AMZ.....1.71E+06 (tons)

TOTAL LOADINGS ON AMZ, INCLUDING TRANSFER FROM BARRIERS				
LOAD	ABUTMENT	LTRANSBAR	LTRANSREM	TOTAL
CONDITION	LOAD (tons)	(tons)	(tons)	(tons)
DEVELOPMENT	0.00E+00	0.00E+00	0.00E+00	1.71E+06

R-Factor for front abutment is the percent of the total front abutment load that is applied to the AMZ.

R-Factor for side abutment is the percent of the total side abutment load that is applied to the barrier pillar (the remainder is applied to the AMZ).

LTRANBAR is the load transferred to the AMZ from the barrier pillar between the side and active gob if the barrier's SF is less than 1.5.

LTRANSREM is the load transferred to the AMZ from the remnant barrier between the side and active gob if the remnant's SF is less than 1.5.

ARMPS, 12/23/2008, 08:00:18

Page: 2

## [PILLAR PARAMETERS]

PILLAR	ENTRY CENTER (ft)	MINIMUM DIMENSION (ft)	MAXIMUM DIMENSION (ft)
1	65.00	47.00	64.22
2	65.00	47.00	64.22
3	65.00	47.00	64.22
4	65.00	47.00	64.22
5	65.00	47.00	64.22

PILLAR	AREA (ft)*(ft)	STRENGTH (psi)	LOAD-BEARING CAPACITY (tons)
1	3.02E+03	3.04E+03	6.61E+05
2	3.02E+03	3.04E+03	6.61E+05
3	3.02E+03	3.04E+03	6.61E+05
4	3.02E+03	3.04E+03	6.61E+05
5	3.02E+03	3.04E+03	6.61E+05

TOTAL LOAD-BEARING CAPACITY OF PILLARS WITHIN AMZ: 4.55E+06 (tons)

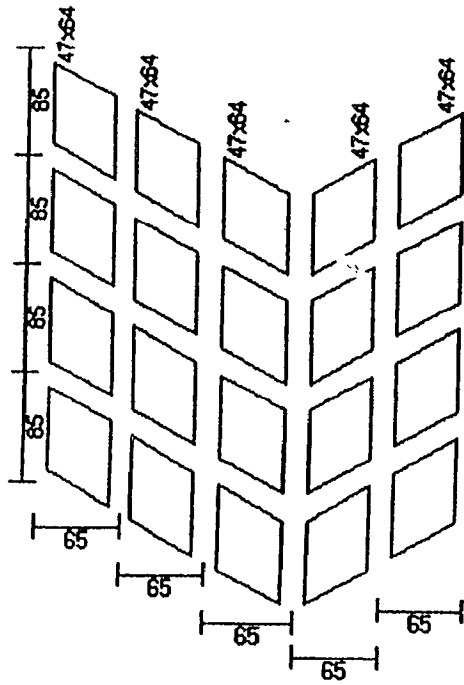
To view the distribution of Pillar Load Bearing Capacity  
select 'View Plots->Settings->Pillar Load Bearing Capacity'

## [BARRIER PILLAR PARAMETERS]

\*\*\*none\*\*\*

## [STRESS ON INDIVIDUAL PILLARS WITHIN THE AMZ]

DEVELOPMENT STRESSES.....1143 (psi)



ARMPS, 12/23/2008, 08:00:46

Page: 1

ARMPS module build: 5.0.43  
 Project File: UnTitled  
 Input Units: (ft) (psi)

[PROJECT TITLE]  
 D-0425-14

[PROJECT DESCRIPTION]  
 45 degree 6 entry main

## [DEVELOPMENT GEOMETRY PARAMETERS]

Entry Height.....7 (ft)  
 Depth of Cover.....555 (ft)  
 Crosscut Angle.....45 (deg)  
 Entry Width.....18 (ft)  
 Number of Entries.....6  
 Crosscut Spacing.....85 (ft)  
 Center to Center Distance #1.....65 (ft)  
 Center to Center Distance #2.....65 (ft)  
 Center to Center Distance #3.....65 (ft)  
 Center to Center Distance #4.....65 (ft)  
 Center to Center Distance #5.....65 (ft)

## [DEFAULT PARAMETERS]

In Situ Coal Strength.....900 (psi)  
 Unit Weight of Overburden.....162 (pcf)  
 Breadth of AMZ.....117 (ft)  
 AMZ set automatically

## [RETREAT MINING PARAMETERS]

Loading Condition.....DEVELOPMENT

## [ARMPS STABILITY FACTORS]

DEVELOPMENT.....2.34

## [DATA ABOUT THE ACTIVE MINING ZONE (AMZ)]

AMZ Width.....325.0 (ft)  
 AMZ Breadth.....117.0 (ft)  
 AMZ Area.....38025.0 (ft)\*(ft)  
 Extraction Ratio Within AMZ.....0.49  
 Development Load on AMZ.....1.71E+06 (tons)

## TOTAL LOADINGS ON AMZ, INCLUDING TRANSFER FROM BARRIERS

LOAD CONDITION	ABUTMENT LOAD (tons)	LTRANSBAR (tons)	LTRANSREM (tons)	TOTAL (tons)
DEVELOPMENT	0.00E+00	0.00E+00	0.00E+00	1.71E+06

R-Factor for front abutment is the percent of the total front abutment load that is applied to the AMZ.

R-Factor for side abutment is the percent of the total side abutment load that is applied to the barrier pillar (the remainder is applied to the AMZ).

LTRANBAR is the load transferred to the AMZ from the barrier pillar between the side and active gob if the barrier's SF is less than 1.5.

LTRANSREM is the load transferred to the AMZ from the remnant barrier between the side and active gob if the remnant's SF is less than 1.5.

ARMPS, 12/23/2008, 08:00:46

Page: 2

## [PILLAR PARAMETERS]

PILLAR	ENTRY CENTER (ft)	MINIMUM DIMENSION (ft)	MAXIMUM DIMENSION (ft)
1	65.00	42.10	66.47
2	65.00	42.10	66.47
3	65.00	42.10	66.47
4	65.00	42.10	66.47
5	65.00	42.10	66.47

PILLAR	AREA (ft)*(ft)	STRENGTH (psi)	LOAD-BEARING CAPACITY (tons)
1	2.80E+03	2.88E+03	5.81E+05
2	2.80E+03	2.88E+03	5.81E+05
3	2.80E+03	2.88E+03	5.81E+05
4	2.80E+03	2.88E+03	5.81E+05
5	2.80E+03	2.88E+03	5.81E+05

TOTAL LOAD-BEARING CAPACITY OF PILLARS WITHIN AMZ: 4.00E+06 (tons)

To view the distribution of Pillar Load Bearing Capacity  
select 'View Plots->Settings->Pillar Load Bearing Capacity'

## [BARRIER PILLAR PARAMETERS]

\*\*\*none\*\*\*

## [STRESS ON INDIVIDUAL PILLARS WITHIN THE AMZ]

DEVELOPMENT STRESSES.....1233 (psi)

# Addendum to Part 4, Item B(4)(i), American Energy Corporation

RMPS: Actual Pillar Dimensions (width\*length, ft). Entries shown from left to right.

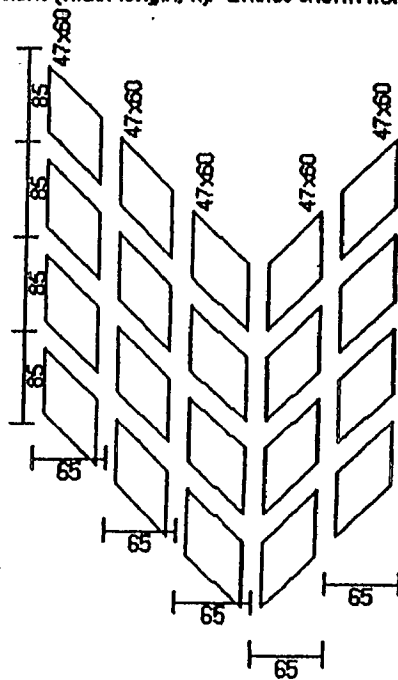




FIGURE I  
PROJECTIONS A THRU F  
APPLICATION: D-0425-14  
NOT TO SCALE




PROJECTION "A" 65X85 GATES 3ENTRY



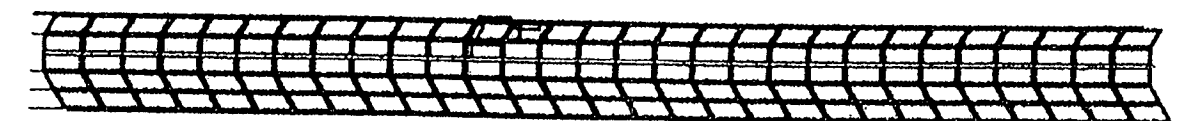
PROJECTION "B" 65X85 GATES 3ENTRY



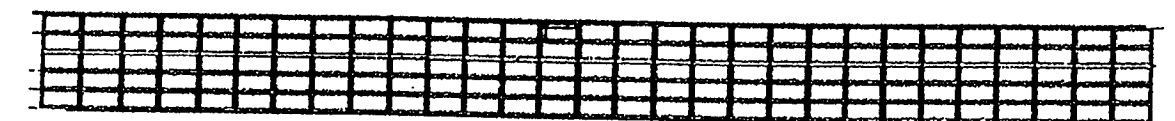
PROJECTION "C" 65X85 GATES 3ENTRY



PROJECTION "D" 65X85 MAINS 6 ENTRY



PROJECTION "E" 65X85 MAINS 6 ENTRY



PROJECTION "F" 65X85 MAINS 6 ENTRY

**Addendum to Part 4, Item B(4)(i)**  
**Mining/Overburden Heights for Room and Pillar - Gate/Main Entries**  
**American Energy Corporation**  
**Century Mine**

The reason for the difference in overburden heights is that the Room/Pillar mining and Gate/Main Entry mining are located in different parts of the coal reserve proposed to be mined by these two very distinct methods of mining.

Mining height for Room/Pillar mining is calculated by adding the seam height to the thickness of the draw rock immediately above the seam and leaving the roof coal in place to aid in roof support.

Mining height for Gate/Main entries is totally dependent on the height needed for safe and adequate clearance of the machinery to be utilized in the longwall method of mining.



## 2.09

- (j) Methods and calculations used to determine the long-term safety factor.

**The Analysis of Retreat Mine Pillar Stability (ARMPS) program, developed by the National Institute for Occupational Safety and Health (NIOSH), was used to determine pillar safety factors.**

- (k) Provide the minimum long-term subsidence control safety factor recommended by the method's author or the literature supporting this method.

**ARMPS room and pillar = 2.09; longwall mains and gates = 2.81. The factors of safety cited were derived using the NIOSH ARMPS ground control program. Recommended factors of safety could not be found within the program. In general, factors of safety of 1.5 or greater are considered adequate (USBM IC 9247). Factors of safety for D-0425-14 all exceed 2.0.**

- (l) Indicate how coal strength was determined if the assumed coal compressive strength exceeds 900 psi.

**A compressive strength of 900 psi was used for the Pittsburgh No. 8 coalbed, per the recommendation of MSHA, District 3, Morgantown, West Virginia.**

- (m) Describe any prior unplanned subsidence events, pillar or floor failure experienced by the applicant. Indicate the seam mined and relevant facts.

**None of the events described above have occurred at Century Mine.**

- (5) For those areas mapped as full coal recovery mining, provide the following information:

- (a) For each method to be employed (i.e. longwall or pillar extraction), provide the following:

- i) Rate and direction of dip for the coal seam.

**South 30 degrees East at 0.5%**

- ii) Dimensions of panels or butt sections.

**Panels (2) Length = 6966' Width = 1132'**

- iii) Thickness of coal to be extracted (mining height).

**5 feet**

- iv) Maximum angle of draw.

## **24 degrees**

- v) Maximum anticipated subsidence.

**4.48 ft. (64% of 7 ft.)**

- vi) Width of barrier pillars or chain pillars between sections or panels.

**400 ft. barrier between mains and panels; 225 ft. barrier between north gate entries and D-0425-3 mains. 163 ft. barrier between gates and southern boundary of room & pillar mining.**

- vii) The maximum extraction ratio within a pillaring section.

**Gate and main entries: 45, 60, 90 degree cross-cuts; 49, 45, 43 percent extraction rates respectively**

- (b) The anticipated effects of planned subsidence upon the land and water resources identified in the subsidence control survey and survey of ground and surface water resources.

### **General**

**The anticipated surface effects of subsidence during and following coal extraction by the longwall method at the Powhatan No. 6 Mine are related to the following movements of the ground surface:**

- 1. Vertical subsidence**
- 2. Horizontal movement**

**The combination of vertical and horizontal movements of points on the ground surface leads to tensile (or extension) and compression strains from curvature of the ground surface and tilt. Extension and compression of the ground surface, in the direction of the movement of the longwall face, occur as the face moves in the direction of mining. The extension and compression effects develop after passage of the longwall face. The surface curvature, with resulting extension and compression, and the tilt near the ends of a mined panel and along the sides of a mined panel, represent the permanent effects of subsidence. There are temporary effects of subsidence from what is known as the dynamic subsidence wave. This wave begins about five days prior to undermining. As the surface begins to subside, the land goes into tension. Tension cracks result on the land surface in some locations (depending on the soil type and topography). Immediately after undermining, the land begins to subside rapidly and goes into compression. Generally, the magnitude of the compressive forces do not reach the magnitude of the tensile forces, and some cracks remain open until the weather (usually rain) fills them. These temporary effects pass very quickly due to the speed of the longwall mining at the Century Mine.**

## **Background**

The dip of the coal is South 30 degrees East at 0.5 percent. The strike is North 60 degrees East. The panel dimensions vary in length from 7413 ft. to 8875 ft., and in width from 890 ft. to 1150 ft.. The gates vary in width from 150 ft. to 174 ft.. The coal thickness to be extracted is approximately 60 in. throughout most of the application area. There is an average of 35 percent of the overburden classified as hard rock according to the test hole data.

## **Time of Subsidence**

The surface effects of mining occur at times generally related to the advance of the longwall face.

1. Movements which develop over a panel being mined with passage of the face: these represent the most significant movements, start soon after the face passes and are generally complete within thirteen (13) days of passage of the face. Approximately 99 percent of the subsidence is complete when the face is located at a distance equal to the depth of cover from any point on the surface.

2. Movements which occur over a previously mined panel as an adjacent panel is mined: such super-incumbent movements are relatively insignificant, being in the range of about 0.2 ft. at the center of the previously mined panel. Such movement at this location is caused by the collapse of the pillars between the two panels and the subsequent subsidence. Therefore, it is evident that the gate entries are part of the full coal recovery mining method.

3. Movements over a long period of time due to consolidation of the gob, and time dependent stress readjustment: long term subsidence of the ground surface is not measurable, and is insufficient to cause surface damage.

## **Predicted Movements**

The surface movements indicated below are derived from measurements made during subsidence over an adjacent mine's first longwall panel (5 West) and over the 10 West and 11 West panels. Similar movements are anticipated within this application area.

### **Monitoring Over First Longwall Panel (5 West)**

In February, 1990, the first longwall panel progressed beneath Smith Township Road 116. The adjacent mine placed subsidence monuments at 25 and 50 foot intervals along the road, measured their elevations prior to mining, and on several occasions after the mining was past the road. Figure 1 shows the plan view of the subsidence monuments. The longwall gate section entries are shown on the figure also. Figure 2 shows the subsidence profile that developed. Table 1 shows the

monitoring data. The longwall face was 600 ft. wide (center-to-center), at a depth of 497 ft., and had a mining height of 5.16 ft. (62 in.).

The maximum angle of draw (measured to 0.2 ft. of displacement) was approximately 15 degrees. The angle of draw on the headgate side was identical to the angle on the tailgate side. It should be noted that the surface at the headgate showed signs of some horizontal movement that caused the monuments on the surface to move downhill. This situation caused some of the displacement of the monuments to the north of the angle of draw. However, with the surveying instruments that were used, an accuracy of 0.02 ft. was used, and the displacement north of the angle of draw was minimal.

The longwall panel passed under the road on February 20, 1990. The first subsidence was observed on February 21, with 99 percent of the maximum subsidence occurring by March 5, 1990 (within 13 days).

The second longwall panel was initially instrumented and the pre-mining elevations were determined. Subsequent measurements were not made, and a search for the monuments revealed that most of the monuments could not be found. However, measurements of the monuments over the first panel showed that the ground had experienced displacements as far south as the middle of the first panel. It was attributed to the collapse of the pillars between the panels, although some movement probably occurred in a downhill direction.

The maximum subsidence occurred near the center of the panel being mined and was measured at approximately 64 percent of the extracted seam thickness. Normally, this represents about 40 inches of subsidence.

#### **Monitoring Over Sixth (10 West) and Seventh (11 West) Panels**

State Route 9 south of Centerville, Ohio was targeted for the next subsidence monitoring program. This program monitored subsidence over two subsequent panels to further show the effect of the surface movement relative to subsequent longwall panels.

The results for the first panel mined in this set (10 West) was identical to the results for the 5 West panel, except that there were indications that subsidence occurred well into the previous panel as a result of the pillar failure and related vertical movement. Since the 9 West panel was not instrumented or monitored, the initial subsidence is not indicated over the 8 West gate entries. Graphs 1 and 2 show the time dependent subsidence during the monitoring program.

Graph 3 shows the subsidence over the common gate section when the first and second panels pass. When the second panel passes, over 1 ft. of subsidence occurs when the second panel subsides. If the pillars had not failed, only minor vertical movement would have occurred, similar to when the first panel passed. The maximum angle of draw was found to be 15 degrees over the solid coal to the north of the 11 West

Addendum to Part 4, Item B (5) (b)  
American Energy Corporation

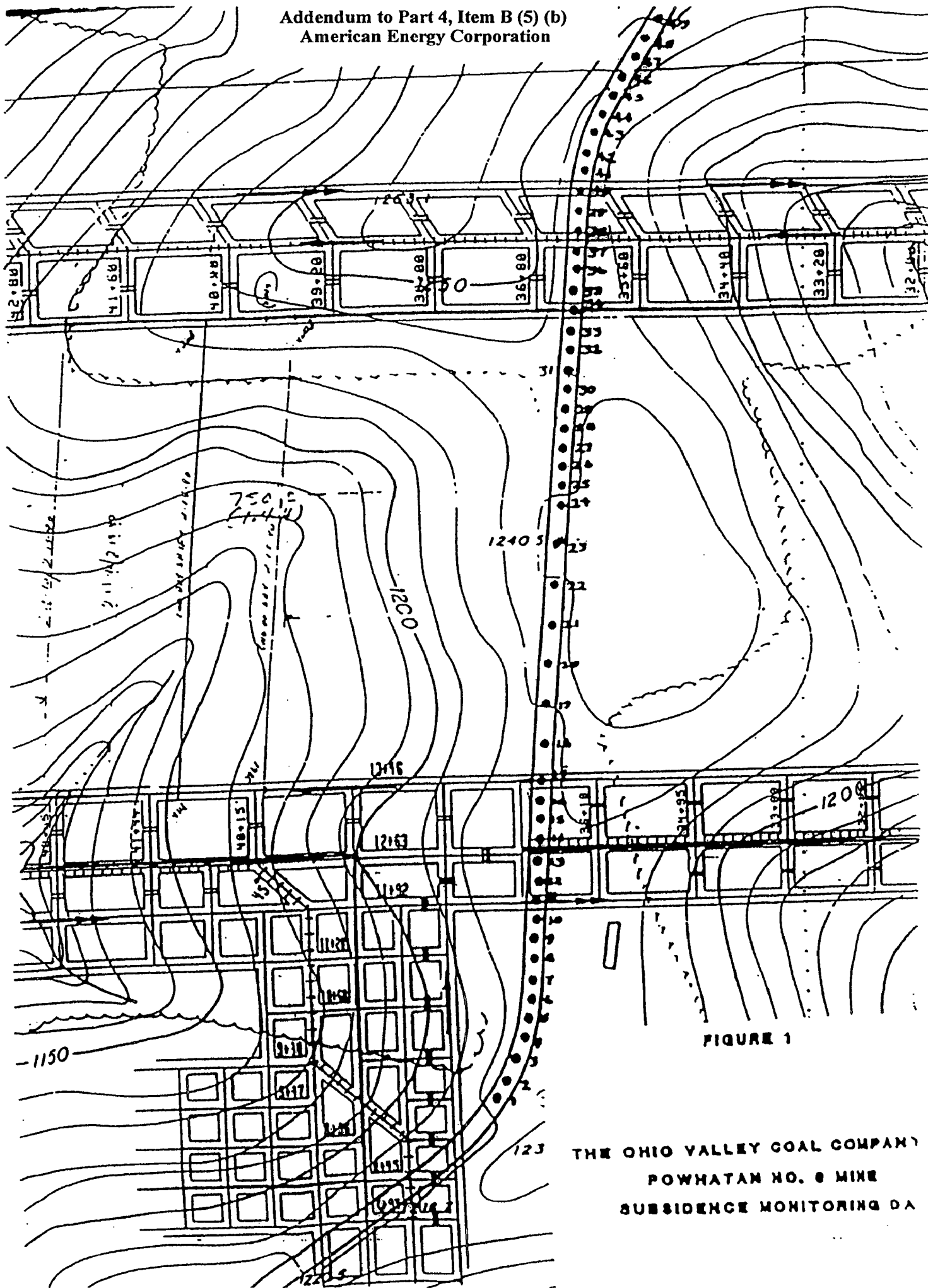
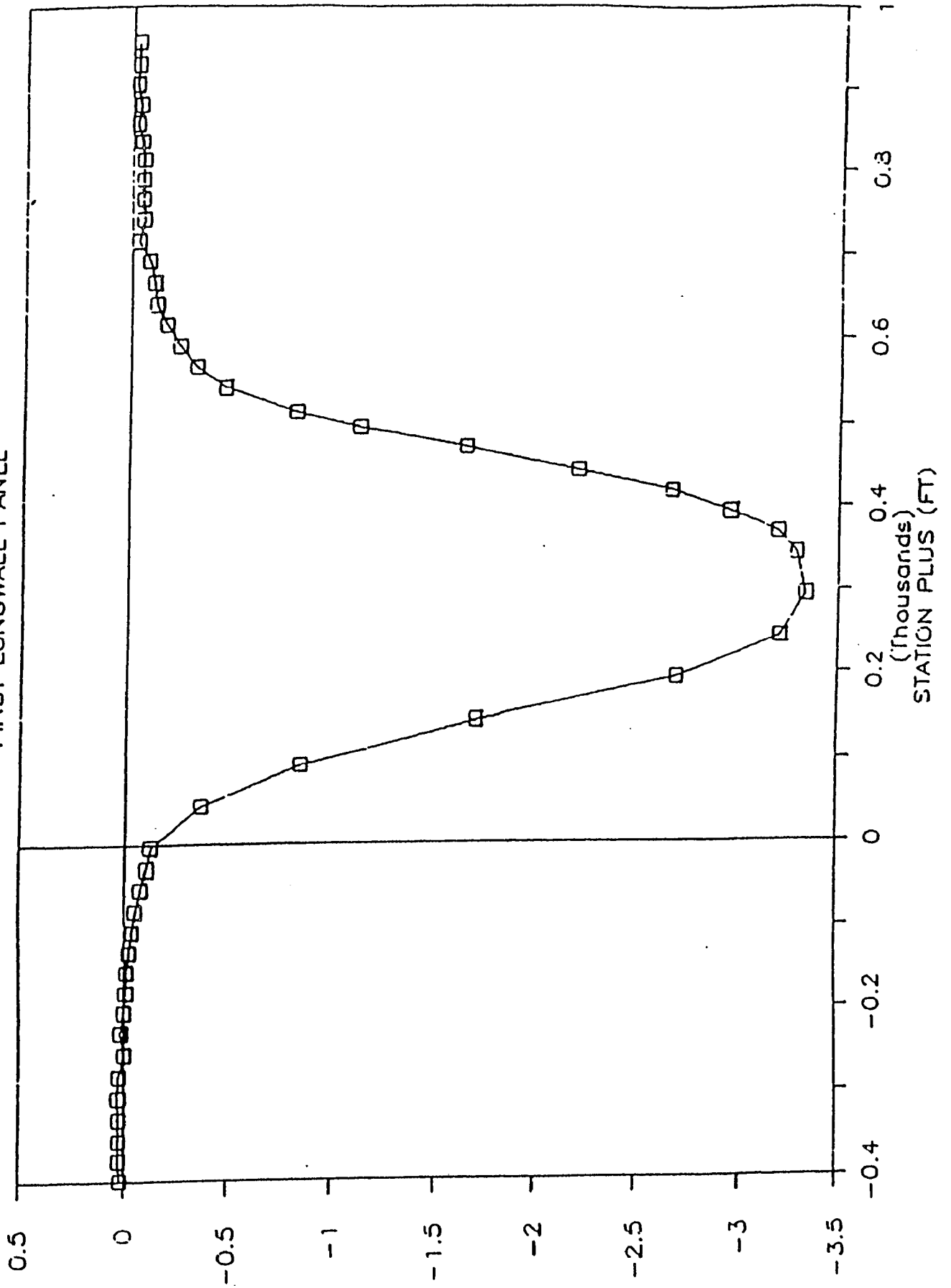


FIGURE 1

THE OHIO VALLEY COAL COMPANY  
POWHATAN NO. 8 MINE  
SUBSIDENCE MONITORING DATA

FIGURE 2  
SUBSIDENCE PROFILE

FIRST LONGWALL PANEL



Addendum to Part 4, Item B (5) (b)  
American Energy Corporation

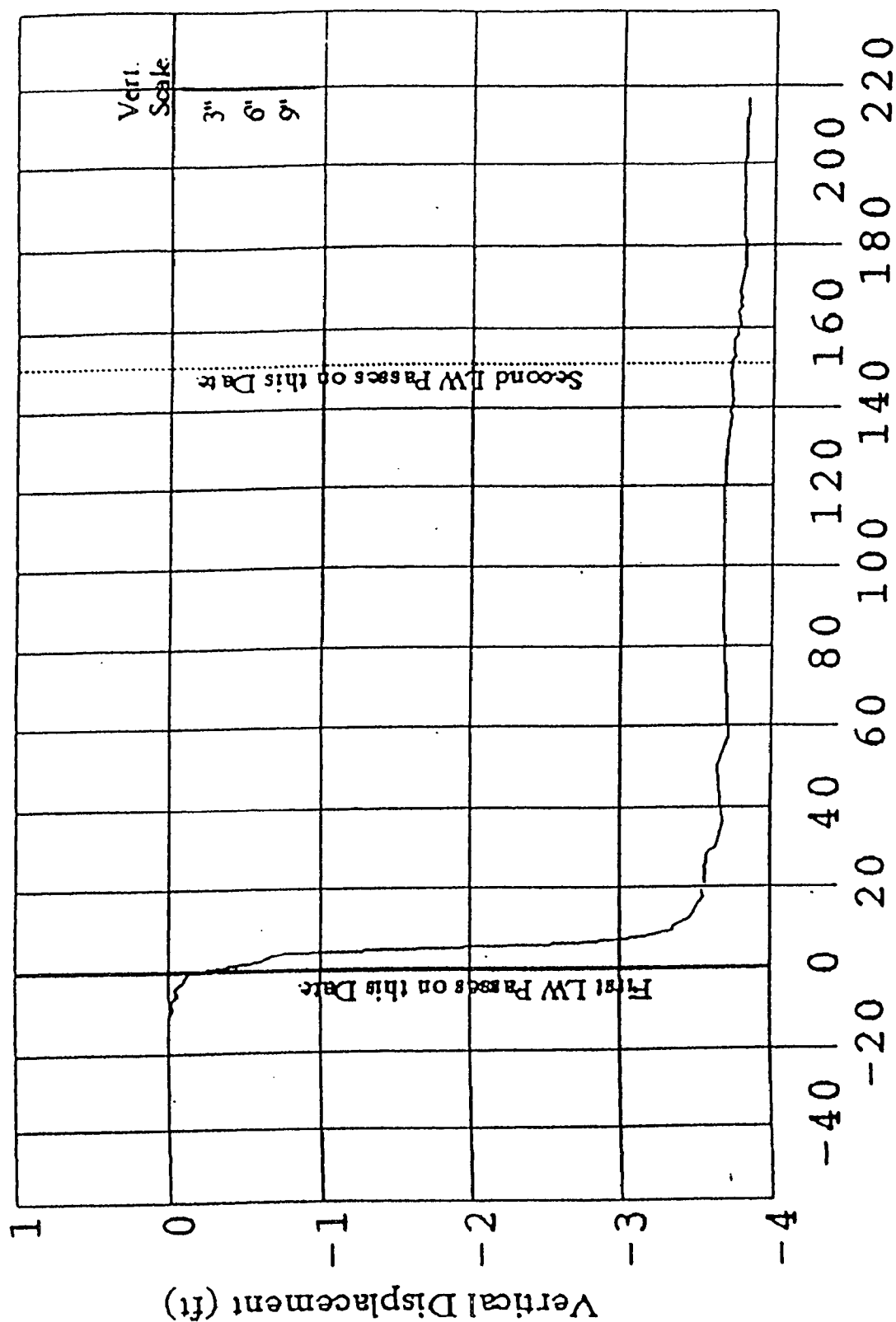
TABLE 1  
SUBSIDENCE DATA COLLECTED OVER "FIRST" PANEL

LOCATION IN PANEL	SUBSIDENCE STATION	STATION PLUS	AVERAGE SINCE 03-05-90
*****	*****	*****	*****
	1	-399.88	0.02
	2	-376.10	0.02
	3	-352.31	0.02
	4	-327.81	0.02
	5	-302.74	0.03
	6	-277.67	0.02
	7	-252.91	0.00
	8	-228.06	0.02
	9	-203.22	0.00
	10	-178.02	-0.01
	11	-152.98	-0.01
	12	-128.17	-0.02
	13	-103.76	-0.04
	14	-79.23	-0.05
	15	-53.91	-0.08
	16	-29.53	-0.11
T. G.	17	-4.67	-0.13
	18	44.98	-0.37
	19	94.67	-0.86
	20	144.40	-1.71
	21	194.26	-2.70
	22	244.94	-3.20
CENTER	23	295.08	-3.33
	24	344.43	-3.28
	25	369.29	-3.19
	26	394.09	-2.93
	27	418.96	-2.67
	28	443.77	-2.21
	29	472.83	-1.64
	30	497.74	-1.12
	31	517.68	-0.81
	32	547.66	-0.47
	33	572.62	-0.33
H. G.	34	597.63	-0.24
	35	622.37	-0.18
	36	647.21	-0.13
	37	672.17	-0.11
	38	697.21	-0.09
	39	722.39	-0.03
	40	747.40	-0.06
	41	771.54	-0.03
	42	794.95	-0.06
	43	818.47	-0.06
	44	841.33	-0.03
	45	864.06	-0.03
	46	886.73	-0.04
	47	909.96	-0.02
	48	933.33	-0.03
	49	960.13	-0.03

Values shown in ft.  
Negative value indicates  
downward movement.

# GRAPH #1

## Subsidence Profile of Station No 29 (Near Panel Center) During Passage of LW Panels

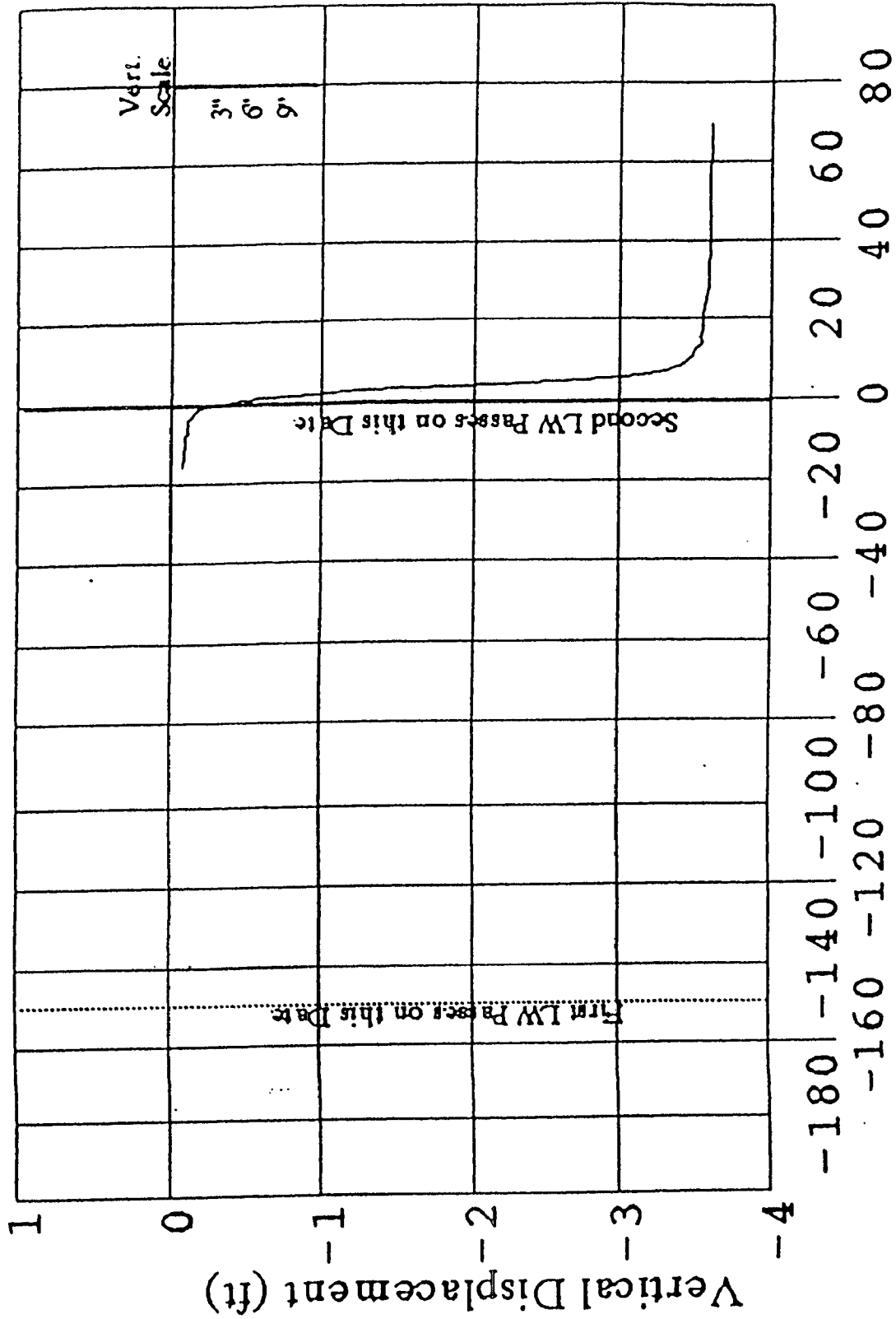


Days Before (-) or After the Station is Undermined



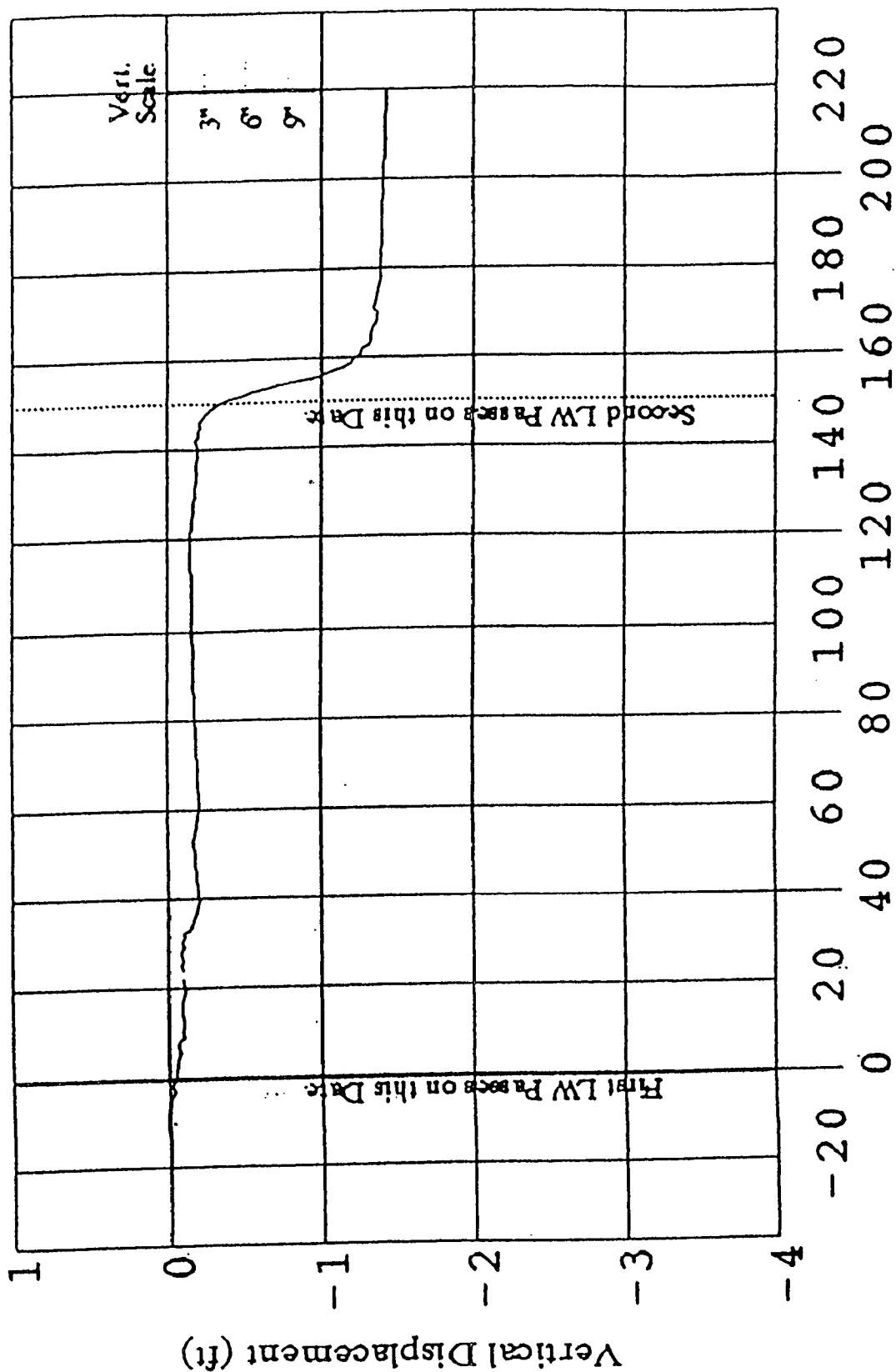
## GRAPH #2

### Subsidence Profile of Station No 52 (Near Panel Center) During Passage of LW Panels



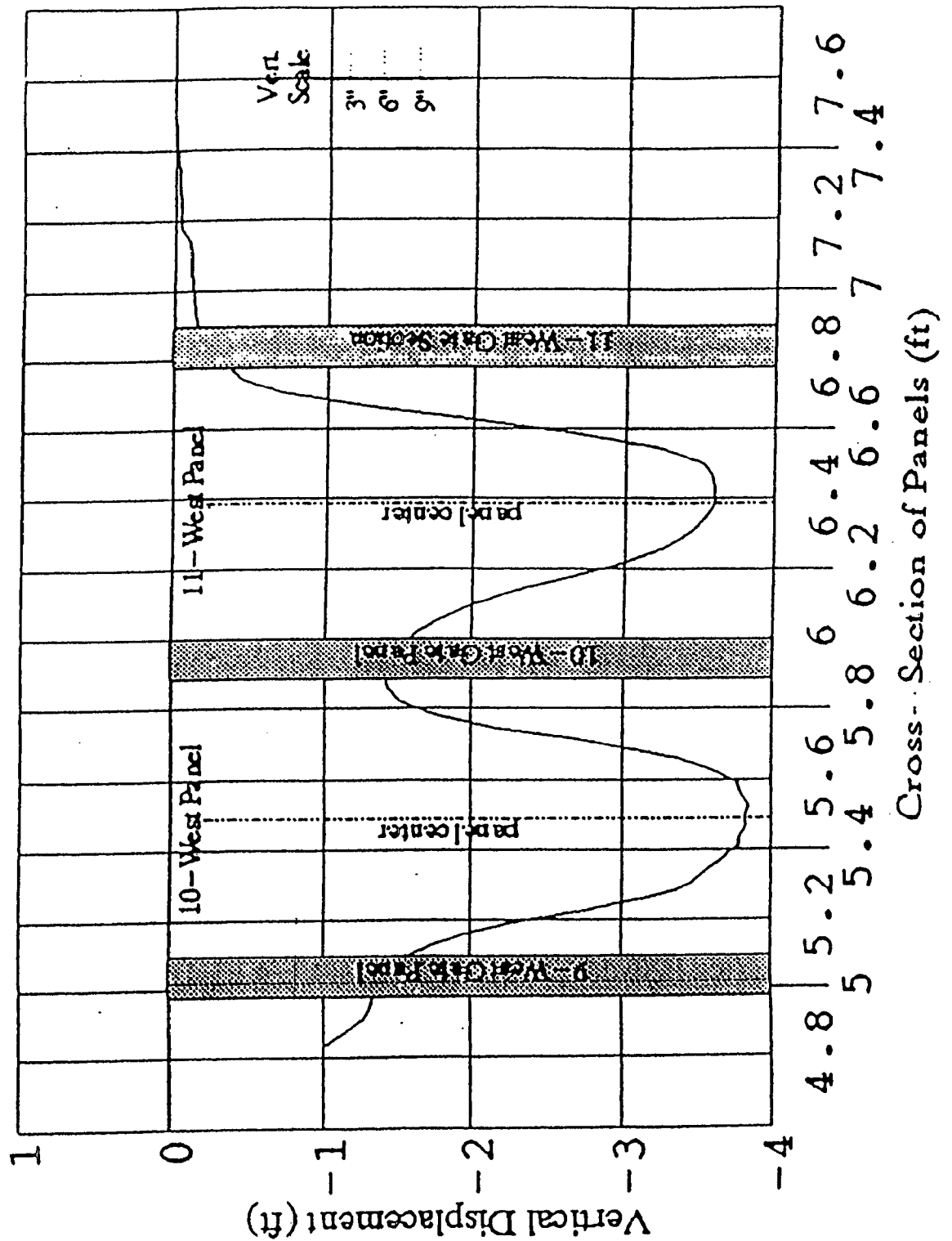
### GRAPH #3

#### Subsidence Profile of Station No 41 (Common Gate) During Passage of LW Panels



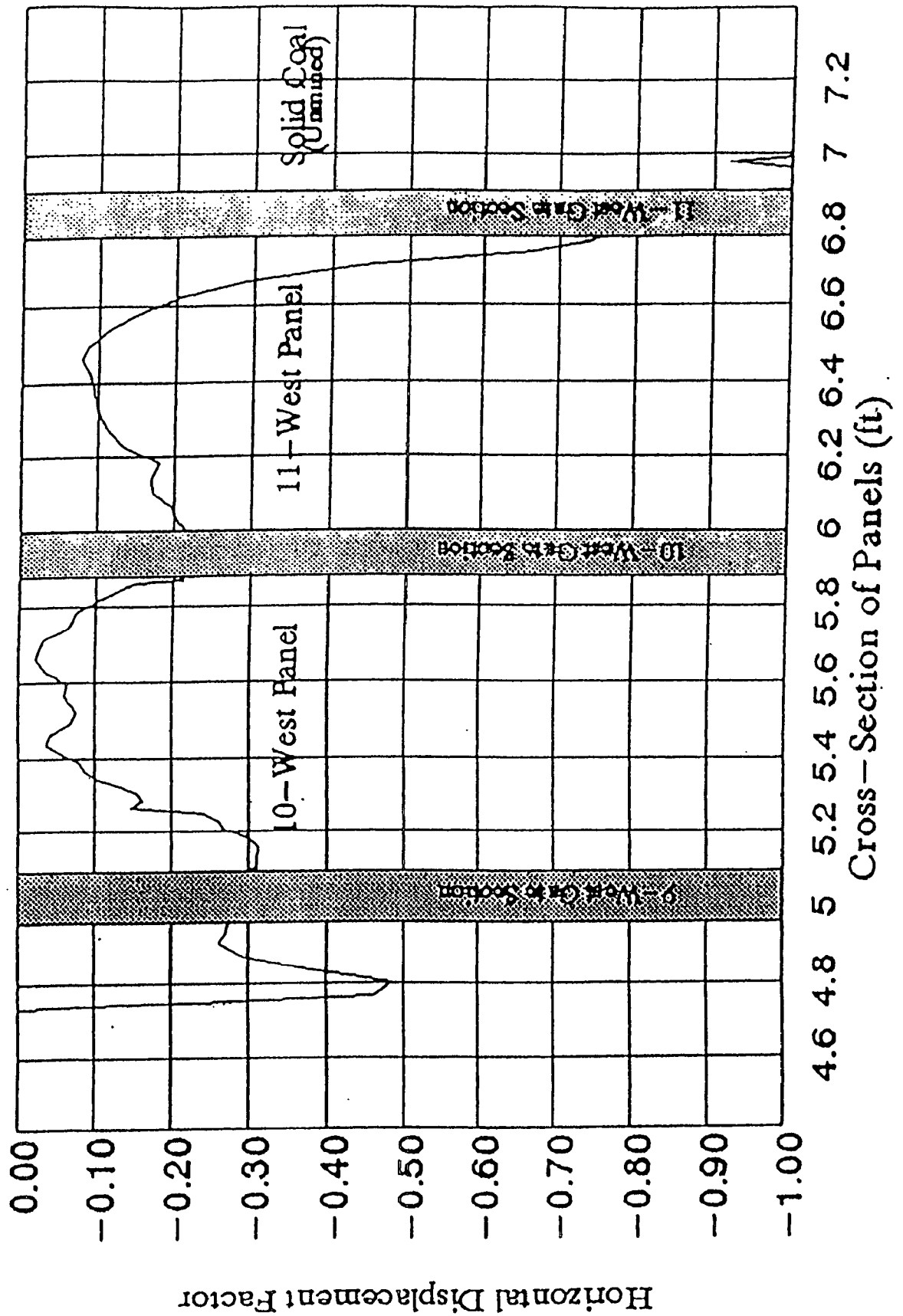
GRAPH #4

Subsidence Profile of the 10-West and 11-West LW Panels  
Surface Section Across Panel Width



GRAPH #5

Route 9 Subsidence Monitoring  
Horizontal Displacement Factor vs Panel X-Section



gate entries. Subsidence again extended to the middle of the 10 West panel, thus showing the predictable nature of longwall mining subsidence. In addition, the magnitude of the subsidence over these two panels was 67 and 65 percent, nearly the same as for the 5 West panel. The data shows that the longwall mining subsidence also is controlled and planned as to the location and timing of the subsidence. Graph 4 shows the longwall subsidence profile similar to the one produced for the first longwall panel (5 West).

Generally, horizontal movement is minimal. Graph 5 shows the horizontal displacement factor (horizontal movement/vertical movement) for each of the panels. The effect of mining against the solid coal versus against the mined panel can be seen.

There were some small (less than 1 inch) surface cracks observed during the monitoring program. These occurred in the soil and in the pavement of Route 9. These cracks closed very quickly due to the compressive forces on the road pavement and to rainfall on the soil areas. No remedial work was required.

#### **Other Observations**

Some horizontal movement occurred in steeply sloping ground where several slips occurred. These slips were mainly in slip-prone soils. Near the center of the panel, the ground moved upwards in several small areas after subsidence as the compressive strain caused the soils to heave upward. Surface cracking up to about 6 inches wide occurred during the time the areas were put under tension. This surface cracking has been limited to only a few small isolated areas where they generally closed due to compressive forces and to rainfall. Most cracks were less than 1 inch wide. Where cracks in the soil were found that were wide enough to be considered hazardous, they were repaired immediately by American Energy Corporation.

Shear and twisting strains have never been observed on any structure at the Century Mine. Twisting and shearing occur when a structure is located immediately adjacent to a corner of a longwall panel within the angle of draw according to Dr. Syd S. Peng, Professor of Mining Engineering at West Virginia University. According to Dr. Peng, "If the structure is inclined to the permanent panel edge, it will be subjected to twisting and shearing resulting in damage." There have been no structures in this position to date at the No. 6 Mine.

- (c) The measures to be taken to mitigate the anticipated effects of planned subsidence to the land and water resources.

#### **Water Resources**

The effect of subsidence on water resources varies greatly. The effect on wells, springs, streams, and other surface water each differ in the type and duration of effects. Each will be discussed below.

## **Wells**

Depending upon the depth of the well, its location within the longwall subsidence area, and its surface elevation compared to the elevation of the coal, the effect of subsidence on wells may vary from complete de-watering to some de-watering to no de-watering. Generally as the subsidence opens new places for the ground water to go, the elevation of the water decreases. The ground water is still present, but at a lower elevation. Aquicludes prevent further downward migration of water into the mine. In addition, the soft rock, particularly the clay stones in the strata, tend to swell, erode, and fill voids, causing some recovery in the elevation of the water. Wells may become completely dry temporarily, may hold less water, or as has been experienced in some instances, may not be affected. In some cases, the water level actually increases temporarily. This effect is caused by the strata being placed in compression and closing some of the joints, cracks, or bedding planes (secondary porosity features) that hold the water. However, as a general rule, the water level in wells decreases. As new surfaces are opened that water begins to flow over, the quality of the water also varies, usually temporarily. Normally, some increase in suspended solids, iron, manganese, and sulfates has been observed. These effects usually return to near normal after the water "washes" out the new chemicals.

De-watered wells will be plugged and abandoned following connection to a public water line. A copy of the plugging report will be submitted to the Division of Water within 60 days of plugging.

## **Springs**

Springs, given the fact that they are located on the sideslopes of hilltops, generally decrease in flow and usually dry completely with little or no recovery. The water stops flowing because it is no longer at the elevation of the surface installation. The water begins to flow horizontally through different bedding planes and can be developed successfully into a spring at a lower elevation, as witnessed in past experience. Water quality varies as with wells. However, because of the increased porosity of the strata, springs developed over longwall panels may not return.

## **Streams**

Generally, streams are temporarily affected by subsidence, decreasing in flow as cracks open in the stream bed. However, because the streams contain a high concentration of sediment during rains, the cracks fill quickly and the effect is short lived. The water re-establishes itself within several years.

Streams in this area begin from undeveloped and developed springs near the head of hollows and are fed throughout their length by springs and surface runoff. Streams that are fed by springs near the head of

hollows continue to receive this groundwater, but at a lower elevation. Since rainfall is unaffected by subsidence, runoff continues to supply the water for streams. See Addendum to Part 4, B(5)(c).

#### **Other Surface Water Features - Impoundments**

Ponds primarily are the other surface water features in this area. Prior experience dictates that ponds are not substantially affected by subsidence in this area. Several ponds have been undermined with no visible effects. Cisterns, catch basins, etc. have also remained unaffected to date.

Ponds may undergo a temporary loss of water as a result of subsidence induced surface cracking. However, cracks in ponds have not caused permanent de-watering of any ponds which have been subsided.

#### **Damage Repairs - Surface Lands**

If subsidence due to mining operations causes slippage which reduces the value or reasonably foreseeable use of the surface land, American Energy Corp. will restore the land to a condition capable of supporting uses it was capable of supporting before subsidence. If slips are triggered by mining activities, these areas would be stabilized in accordance with accepted site specific procedures for such work if technologically and economically feasible. If not feasible, AEC will arrange alternative measures to mitigate the damage.

1. Notwithstanding its mining rights and without waiving nor releasing any of its rights, AEC will make repairs of damage caused to surface lands by AEC's mining operations if the damage reduces the foreseeable use or value of the surface lands. If such damages occurs, AEC will submit to the Chief within thirty days after the damage occurs:

a.) Site specific plans for the repair or mitigation of the damage, including a time schedule for performance of the remedial action.

b.) A request for more time to prepare such plans; or

c.) Written notification stating that AEC believes repair/restoration measures are not technologically feasible or repair/restoration measures are not desired by the owner. If this occurs, other measures will be described.

2. Damage to surface lands will be repaired by local contractors. As surface damage occurs, the landowner will be notified and permission to repair the damage will be requested. Surface cracks will usually be repaired by the following method. After the length of the subsidence crack has been determined, a trench will be made in the crack. During the excavation topsoil will be segregated from subsoil and rock. Upon

completion of the excavation, the material will be compacted using the track of the bulldozer or the wheel of the backhoe. Once the soil material has been replaced, the area will be seeded as a hayfield, pasture field, or yard.

AEC will employ a program to monitor surface cracking and settling resulting from subsidence. Areas being mined will be inspected at various intervals, ranging from daily to weekly. These areas will be visually inspected for the subsidence related problems. If a problem is found, the landowner will be notified immediately.

In most cases, surface cracks are expected to open and close in a relatively short period of time, however, some cracks may take weeks to close. For this reason, most cracks will not be repaired until AEC determines that the cracks are not going to close themselves. If the surface cracks are in an area that is commonly traveled by man or livestock, the cracks will be repaired immediately. Surface cracking that is found in areas not commonly traveled, may be marked with brightly colored tape. This tape will alert anyone in the area of the depression or opening. If the cracks do not close within the period of time AEC determines is adequate, a contractor will repair the cracks.

Monitoring of these areas will continue for up to six months after mining, and if the cracks reopen, they will once again be repaired. Monitoring of panel areas before mining consists of visual inspection or aerial photo review. AEC's subsidence control program will adequately assure that the value and reasonably foreseeable use of the surface land is maintained.

#### **Damage Repairs - Water Resources**

To date no repairs have been required for wetlands. None are anticipated.

Generally, streams are temporarily affected by subsidence, decreasing in flow as cracks open in the stream bed. However, because the streams contain a high concentration of sediment during rains, the cracks fill quickly and the effect is short lived. The water re-establishes itself within several years.

To date no repairs have been required for streams containing fish. None are anticipated.

A large percentage of the streams in the area are intermittent, meaning that there is no detectable flow during the dry seasons of the year. See addendum to Part 4, B(5)(c).

AEC will monitor all streams as outlined in the Addendum to Part 3, Item D. In the event that a stream's flow is reduced or diminished due to longwall subsidence, or if normal flow is not re-established AEC will, at it's expense, fully grout or line the stream bed to mitigate the



subsidence damage and restore normal flow to the stream.

In the event that other water resources such as springs and wells are diminished due to longwall subsidence. AEC will take measures to restore the water supply as outlined in Part 2, Item C(2).

Repairs to impoundments will consist of sealing cracks inside the pond and repairing any damage to spillway structures which may have occurred as a direct result of surface subsidence during undermining the impoundment.

- (d) The anticipated effects of planned subsidence upon the structures identified in the subsidence control survey.

Structures situated over a panel or within the angle of draw may be damaged due to subsidence. When the longwall passes directly under a structure, the structure experiences first moderate tensile stress, then moderate compressive stress. As the structure subsides, the end that was undermined first, subsides first, causing some tilting away from the advancing face. As the surface over the panel subsides, it takes on the shape of a trough, with the edges remaining in tension and the center in compression. Because the mining face moves quickly, damage to structures from this type of movement is minimized.

The damage that may be expected may involve cracking of plaster, cracking of concrete block or brick, cracking of dirt and cement floors, cracking along mortar joints, and separation of existing cracks. Cracks may close partially or completely after subsidence is complete. Additions to houses may separate away from the original structure. Cracks that occur during separation may close partially or completely after subsidence is complete.

#### Utility Installations

AEC anticipates minimal impact on the utility installations over the proposed application area. Utility lines (water, electric, etc.), undergo minimal damage due to subsidence over the underground mining area. The utility lines that are typically damaged are county water lines made of asbestos concrete. No such construction is found in the application area. Other construction materials withstand subsidence well.

- (e) The proposed measures to be taken to mitigate anticipated effects to structures.

#### Damage to Public Roads

AEC will notify the appropriate road authority at least six months prior to undermining the road. In the event that roadways are damaged by subsidence, AEC will pay to repair the road surface to its pre-mining conditions. AEC will assume full responsibility for the repair or mitigation of damages.

**Addendum to Part 4, B(5)(c)  
American Energy Corporation**

**Damage Repairs - Streams**

The following paragraphs outline the history of undermining streams through longwall mining at the Powhatan No. 6 Mine (The Ohio Valley Coal Company) which is a neighboring mine in very close proximity to Century Mine in the Pittsburgh No. 8 coal seam.

Since 1990, the Powhatan No. 6 Mine has undermined over 50,000 feet of streams, including ephemeral, intermittent, and perennial streams. Impacts to streams vary according to many factors, including depth of cover, the order (drainage area size) of the stream, topography, rainfall for a period following undermining, etc.. In general, streams recover within several years after subsidence proceeds under a stream.

It is believed that streams are impacted through two mechanisms, fracturing of bedrock and disruption of stream gradient. When the longwall mines through an area, subsidence occurs. The land subsides immediately after the longwall advances past a point. TOVCC's monitoring shows that subsidence is complete within five to ten days. As the ground subsides, it experiences tensile and compressive forces such that existing cracks may be opened or closed, and new cracks form due to the tensile forces. In general, the additional cracking that occurs from the subsidence "wave" may cause a stream to go dry temporarily. After several months, and following several significant rainfall events, naturally occurring sediment fills the cracks and the streams tend to heal themselves following subsidence. Since the streams are located at low elevations, the naturally occurring confining pressures from the surrounding hillsides tend to close the cracks as well. Flow is re-established after several months when sufficient rainfall has occurred to fill any cracks and to replenish the water table to allow water to rise into the streambed.

Subsidence occurs more in the middle of a longwall panel, compared to the sides or ends. The "differential subsidence" disrupts the gradient of the stream to where water can be observed flowing and then it disappears when the downstream bed is higher than the upstream segment. It is not uncommon to have water pool upstream of gate entries, requiring some minor re-grading of the stream to re-establish the gradient for the entire length of the stream. In a few locations, the middle of the panel moves upward as the ground around it is put into compression, causing a localized "high spot". During high-flow periods, the gradient is re-established naturally. Occasionally, some fieldwork is necessary so the process occurs faster.

Recently, TOVCC conducted a study of streams (all types - perennial, intermittent, ephemeral) undermined by TOVCC's longwall operations. In the last several years, the Powhatan No. 6 Mine has undermined several streams. Efforts were

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concentrated on main streams that were undermined within the last six years. It was discovered that approximately 89 percent of the nearly 50,000 feet of streams were flowing. The remaining 11 percent are located in remote areas requiring some gradient work to re-establish flow for the entire length of the stream. This evaluation was performed in September, 2006 when flow conditions were low. There had been no rain for several days, so we believe that the conditions were appropriate for this evaluation. Table 1 shows the results of the field evaluation.

**Table 1 Stream Recovery 1999 - 2005**

<b>Mined From</b>	<b>Mined To</b>	<b>Total Length (ft)</b>	<b>Non-Flowing Length (ft)</b>	<b>Flowing Length (ft)</b>	<b>Percent Flowing</b>
Sep-05	Sep-06	1121		1121	100%
Sep-04	Sep-05	6555		6555	100%
Sep-03	Sep-04	19172	-3094	16078	84%
Sep-02	Sep-03	10112	-388	9724	96%
Sep-01	Sep-02	4968	-1337	3631	73%
Sep-00	Sep-01	5430	-554	4876	90%
Sep-99	Sep-00	2501		2501	100%
SINCE SEP-99	Totals	49859	-5373	44486	89%

Stream flow appears to be independent of time, and appears to be more dependent on establishing the proper flow gradient. Streams undermined only one or two years before the study date (September 2006) were flowing for their entire length, as were streams undermined seven years before the study date. However, there were streams undermined only four years before the study date, where only 73 percent of the stream length was flowing. These latter streams had little re-grading work done to date. If these streams do not recover naturally, OVCC plans to re-establish the gradient of the stream.

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### **Damage to Public Water Lines**

AEC will notify the owner of public water lines at least six months prior to undermining the lines. In the event that the pipelines are damaged by subsidence, AEC will pay to repair the pipeline to its pre-mining conditions. AEC will assume full responsibility for the repair or mitigation of damages.

### **Damage to Public Sewer Lines**

AEC will notify the owner of public sewer lines at least six months prior to undermining the lines. In the event that the pipelines are damaged by subsidence, AEC will pay to repair the pipeline to its pre-mining conditions. AEC will assume full responsibility for the repair or mitigation of damages.

### **Damage to Other Utility Lines**

AEC will notify the owner of other utility lines (electric lines and substations) at least six months prior to undermining the lines to allow the utility to take measures that deem necessary and proper to protect their property and the public health and safety.

### **Local Gas Distribution Line**

American Energy Corporation will provide the owner(s) of the gas line with the timing of the mining under the gas line to allow the owner(s) to take whatever measures it deems necessary to protect its line from damage. If the owner's measures are followed, American Energy Corporation does not anticipate any damage to the gas distribution line.

- (f) The proposed measures to determine the extent of mining related damages including a pre-subsidence survey with an indication of the timing of the survey.

### **Notice of Mining**

AEC will mail written notice to owners and occupants of surface property or structures of AEC's intent to mine under such property or structures at least six months prior to any mining by AEC under their property.

### **Pre-Subsidence Survey**

A pre-subsidence survey of all structures to be undermined will be conducted by AEC personnel or by someone contracted to do this work and will be used to determine the condition of the structures and facilities prior to the mining unless a private agreement exists between AEC and the landowner. This survey may include, but not limited to:

still and video photography; land surveying; making various measurements; interviewing landowners, tenants, or other individuals; and making various drawings. This survey will be performed in accordance with Underground PPD 90-3. Refusal of the landowner to allow a pre-subsidence survey will result in the amount of damage caused by subsidence to be indeterminate. In such cases, AEC will enforce the terms of its deed language, which deeds represent valid agreements between the coal owner and the owner of the surface estates and address all damage that may occur due to the removal of all coal. Such agreements vary from tract to tract, but are shown in the Addendum to Part 1, Item C (8)(b).

- (g) The provisions for repair and/or compensation for damages to structures.

After mining, structures will be repaired or replaced as required by law or the owner will be compensated for the diminution in value to the extent required by law. A private agreement may be used to satisfy the requirements of OAC 1501: 13-12-03. If repaired, structures will be returned to their pre-mining condition.

Repair of and compensation for damage under the terms and conditions of OAC 1501: 13-12-03(F) and (H) can be determined only after review and analysis of the damage in each particular situation. AEC will comply with all legal requirements if subsidence damages occurs.

- (h) Describe the monitoring, if any, needed to determine the commencement and degree of subsidence so that, when appropriate, other measures can be taken to prevent, reduce, or correct material damage in accordance with rule 1501:13-12-03 of the Administrative Code.

After American Energy Corporation (AEC) has completed its pre-subsidence survey, AEC will notify the Division of Mineral Resources Management if a private agreement (pursuant to OAC 1501: 13-12-03(E) between AEC and the landowner exists. If no agreement exists, the Division of Mineral Resources Management, after discussions with AEC, will decide the need for any monitoring of the structure(s). If monitoring is required, AEC will submit a plan for the monitoring. If, prior to subsidence, a private agreement is reached, AEC shall be released from any and all monitoring requirements.

- (6) Will planned subsidence operations be conducted within the angle of draw of urbanized areas, cities, towns, communities, industrial or commercial buildings, major impoundments, or perennial streams?

Yes ☒ No ☐ If "yes," describe any measures or activities that will prevent a condition or practice that could result in an imminent danger to the health or safety of the public.

**Impoundments P-34.01 and P-34.11 on the W. & B. Reed property will be modified to ensure that their storage capacity is less than 20 ac-ft. This will be**

done by modification of the principal spillways on both impoundments. See Addendum to Part 4, B(6).

- (7) Will planned subsidence operations be conducted within the angle of draw of transmission pipelines?

Yes ☐ No ☒ If "yes," describe the procedural plan to avoid the creation of a situation of imminent danger to the health and safety of the public.

## **PART 5: FORMAT AND CONTENT**

### **A. FILING OF ADDENDA**

If an addendum is needed to present the information required by the items in the permit application, the addendum is to be submitted with the permit application and each page, map, plan or other document in the addendum should include the applicant's name and indicate to what item the addendum applies. For example, "Addendum to Part 3, item A (11)(c)Zebco Coal Company."

B. Provide the information requested below for all technical data submitted in the application.

Identification of Technical Data *	Person/Organization that Collected Data and Date	Methodology for Collecting Data	Person/Organization that Collected Data and Date	Methodology Used to Analyze Data
Hydrologic Analyses	Fred Blackman, Quality Environmental Services	Grab Samples and Interviews	Richard Whitt/Tra-Det Inc., Sept. 2007 thru March 2008	Analyze as necessary for parameters
Drilling Report Attachment 13	L.J. Hughes & Sons, Inc., 1950, 1987, 1994, 2000, 2001, 2002	Core Drill	Unknown/Tra-Det 1987, 1994, 2000, 2001, 2002; Paul N. Brown/Morgantown Coal Testing Laboratory, 1950	Analyze as necessary for parameters
Drilling Report Attachment 13	Jay Little Drilling Co. 2001	Core Drill	Unknown/Tra-Det, 2001	Analyze as necessary for parameters
Drilling Report Attachment 13	Kerogen Resources 2001, 2002	Core Drill	Unknown/Tra-Det, 2001, 2002	Analyze as necessary for parameters
Drilling Report Attachment 13	West Virginia Resources, Inc., 2008	Core Drill	Luther Hendricks/Tra-Det, 2008	Analyze as necessary for parameters
Drilling Report Attachment 13	McKee Drilling, 2008	Core Drill	Luther Hendricks/Tra-Det, 2008	Analyze as necessary for parameters
Drilling Report	Pennsylvania Drilling Co., 1956	Core Drill	Lawrence K. Jones/Pittsburgh Testing Laboratory, 1956	Analyze as necessary for parameters

### **Addendum to Part 4, B(6)**

There are two Impoundments on the Reed property, P-34.11 and P-34.12, which are presently more than 20 acre-feet in volume. The form for Subsidence Control – Protection of Specific Structures is not needed as there is a plan to modify the impoundments to a volume of less than 20 acre-feet to remove them as qualifying structures.

Since these structures will be modified per the plan outlined in Addendum to Part 4 A(2), there will be no safety hazards or imminent danger to the public associated with potential subsidence.

Greg S. Williams, PE

FEB 19 2010

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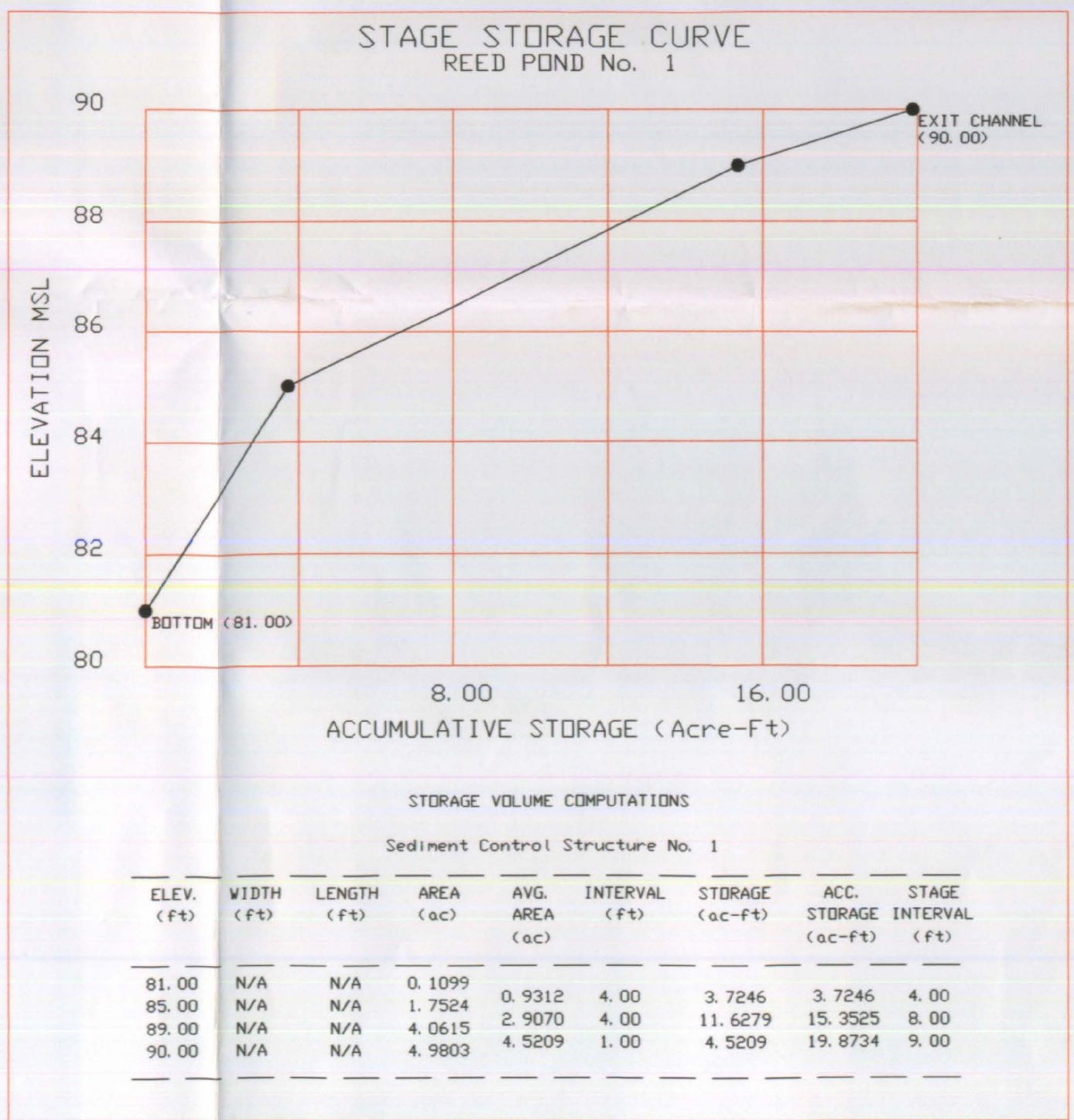
Drilling Report	Leroy G. Hetager, Inc., 1967, 1968, 1998	Core Drill	Unknown	Analyze as necessary for parameters
Drilling Report Attachment 13	B.B.R. Drilling Co.	Core Drill	Unknown	Analyze as necessary for parameters
Drilling Report Attachment 13	Karl K. Hetager Co.	Core Drill	Unknown	Analyze as necessary for parameters
Drilling Report Attachment 13	B.H. Mott & Sons, Inc.	Core Drill	Unknown	Analyze as necessary for parameters
Slip Prone Soils Information - Belmont County, Ohio	United States Department of Agriculture, Soil Conservation Service Fieldwork 1972-1977 by Neil Rubel, Paul C. Jenny, Michael K. Plunkett, Richard A. Bird, Richard M. Gehring, and Robert Hendershot	Test pits dug to study soil profiles	United States Department of Agriculture, Soil Conservation Service	Soil samples taken for laboratory measurements and engineering tests
Slip Prone Soils Information - Monroe County, Ohio	United States Department of Agriculture, Soil Conservation Service Fieldwork 1960-1966	Test pits dug to study soil profiles	United States Department of Agriculture, Soil Conservation Service	Soil samples taken for laboratory measurements and engineering tests

\* The technical data is to be identified by referencing the particular item in the application for which the data was used in preparing the response (e.g. Part 2, B (1); Hydrologic Analyses; Part 4, A.

- C. Provide the following information for each private or academic research organization or governmental agency contacted in the preparation of the application for information on land uses, soils, geology, vegetation, fish and wildlife, water quantity and quality, air quality, and archeological, cultural, and historic features.

Name and Address of Agency/Organization	Name, Position and Phone Number of Contact Person	Type of Information (e.g. Geology)
<b>ODNR, Division of Water 2045 Morse Road, Bldg. B-3 Columbus, Ohio 43229-6693</b>	<b>B. Haiker, Hydrogeologist (614) 265-6690</b>	<b>Hydrology</b>
<b>Tra-Det Inc. P.O. Box 2019 Wheeling, WV 26003</b>	<b>R. Whitt, Analyst (304) 547-9094</b>	<b>Water Sample Analysis</b>
<b>Geological Records Center 4283 Fountain Square Court Columbus, Ohio 43224</b>	<b>ODNR, Division of Geological Survey (614) 265-6860</b>	<b>Oil/Gas Well Data</b>
<b>William J. Siplivy, P.E., Inc. 4667 Turnberry Trail Stow, Ohio 44224</b>	<b>William J. Siplivy, P.E., C. P.G., President (330) 678-0027</b>	<b>Pillar Stability Analysis</b>





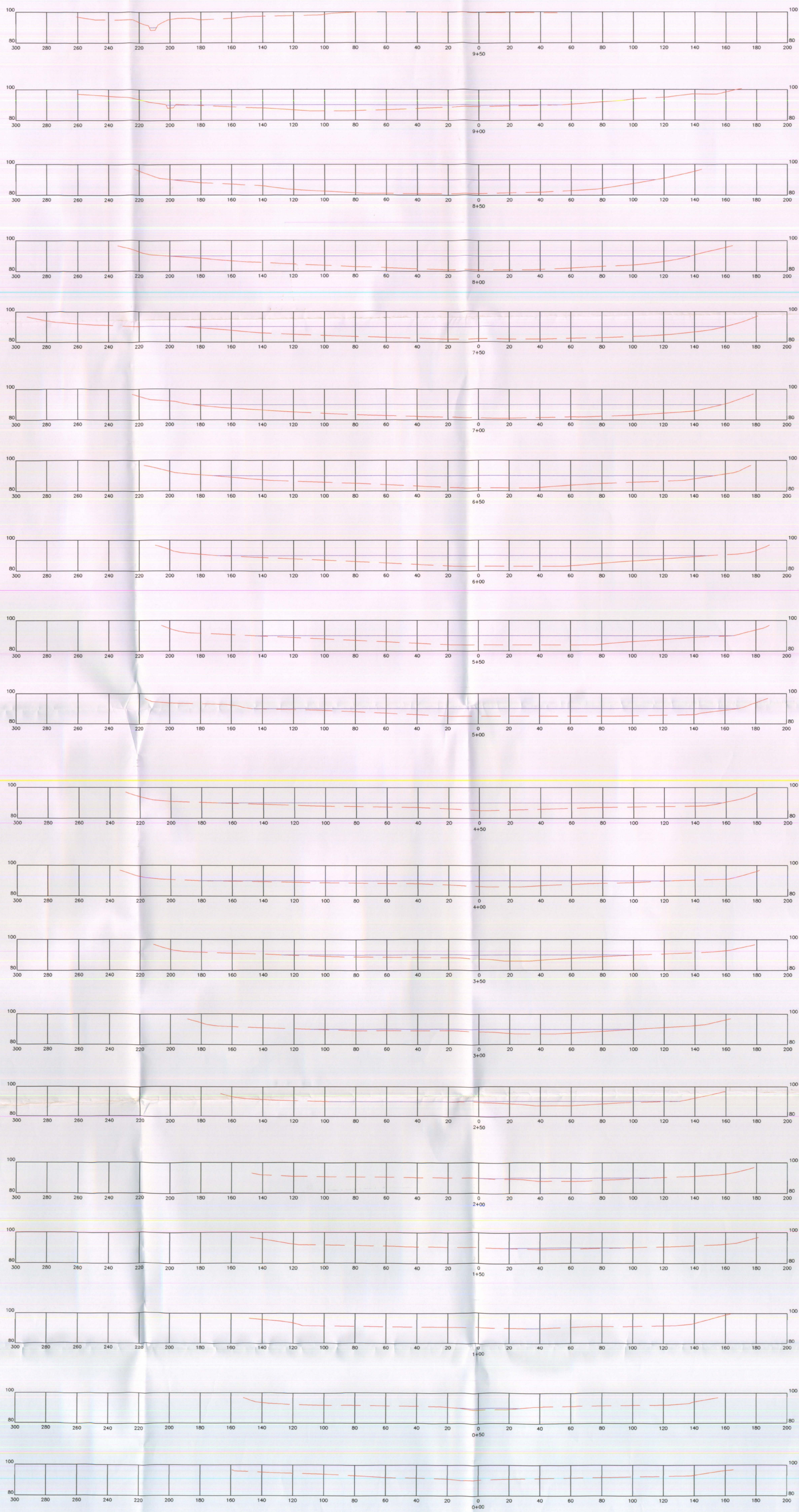
REGISTERED ENGINEER

AMERICAN ENERGY CORP.  
CENTURY MINE

AS BUILT  
REED POND NO. 1

SCALE 1" = 50'





AMERICAN ENERGY CORP.  
CENTURY MINE

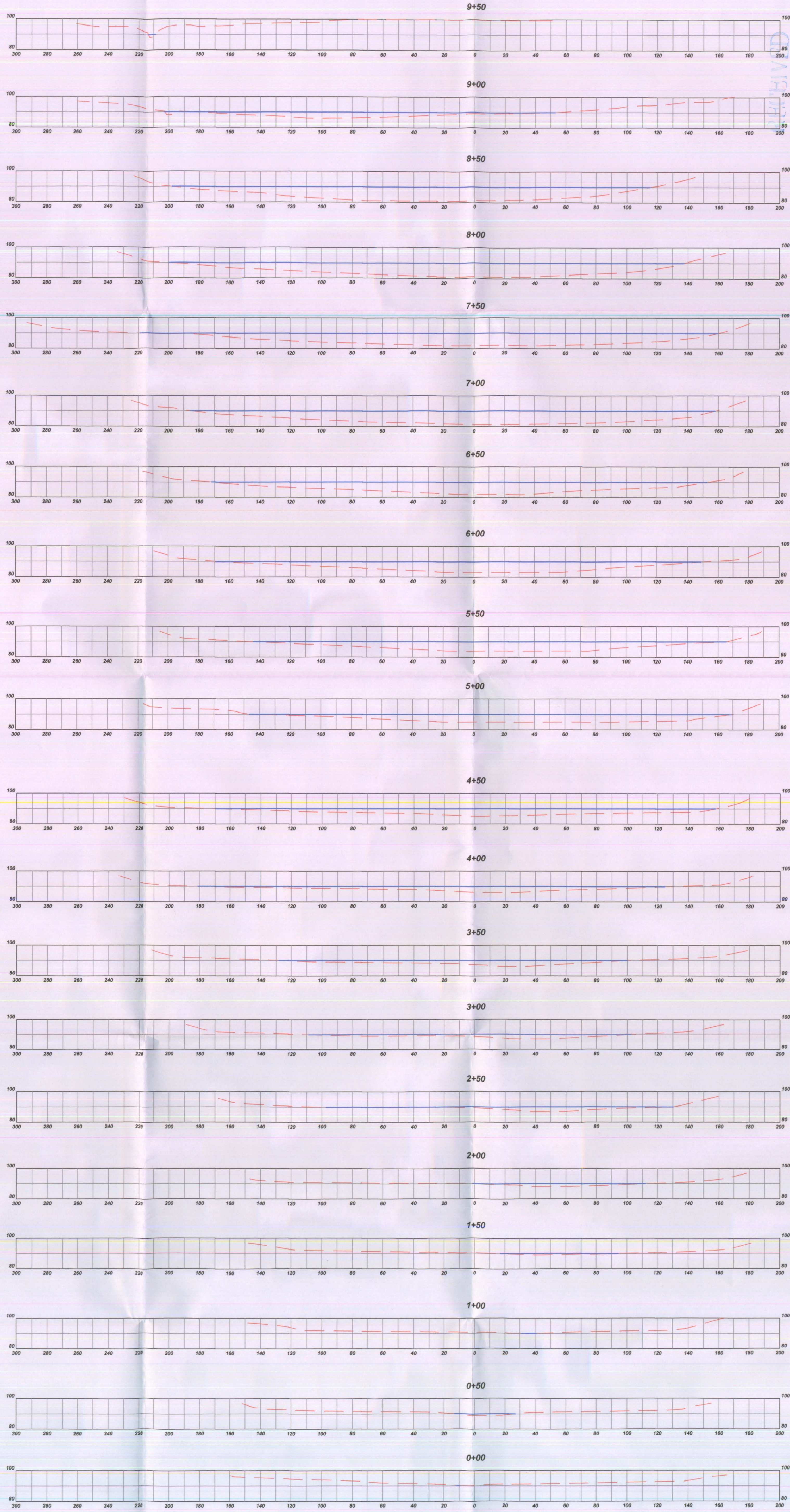
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REGISTERED ENGINEER

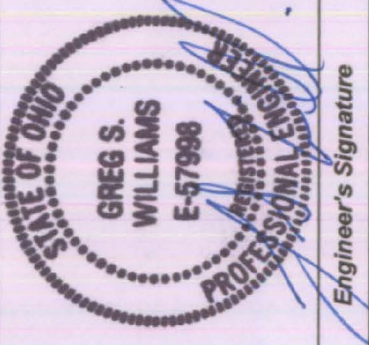
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WATER LEVEL



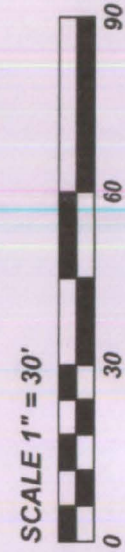


DIVISION OF MINERAL RESOURCES  
Aug 11 2009  
P. Williams

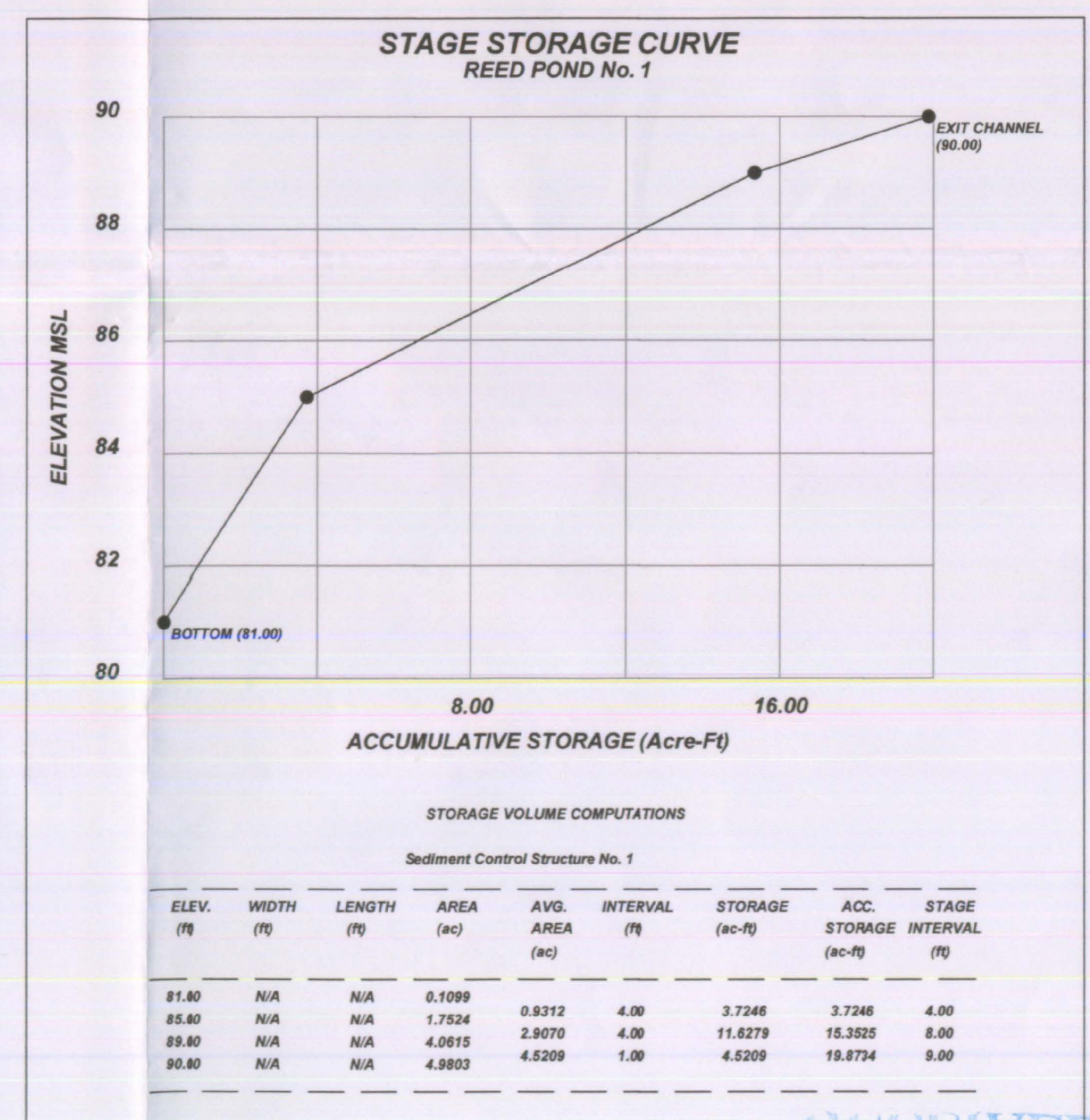
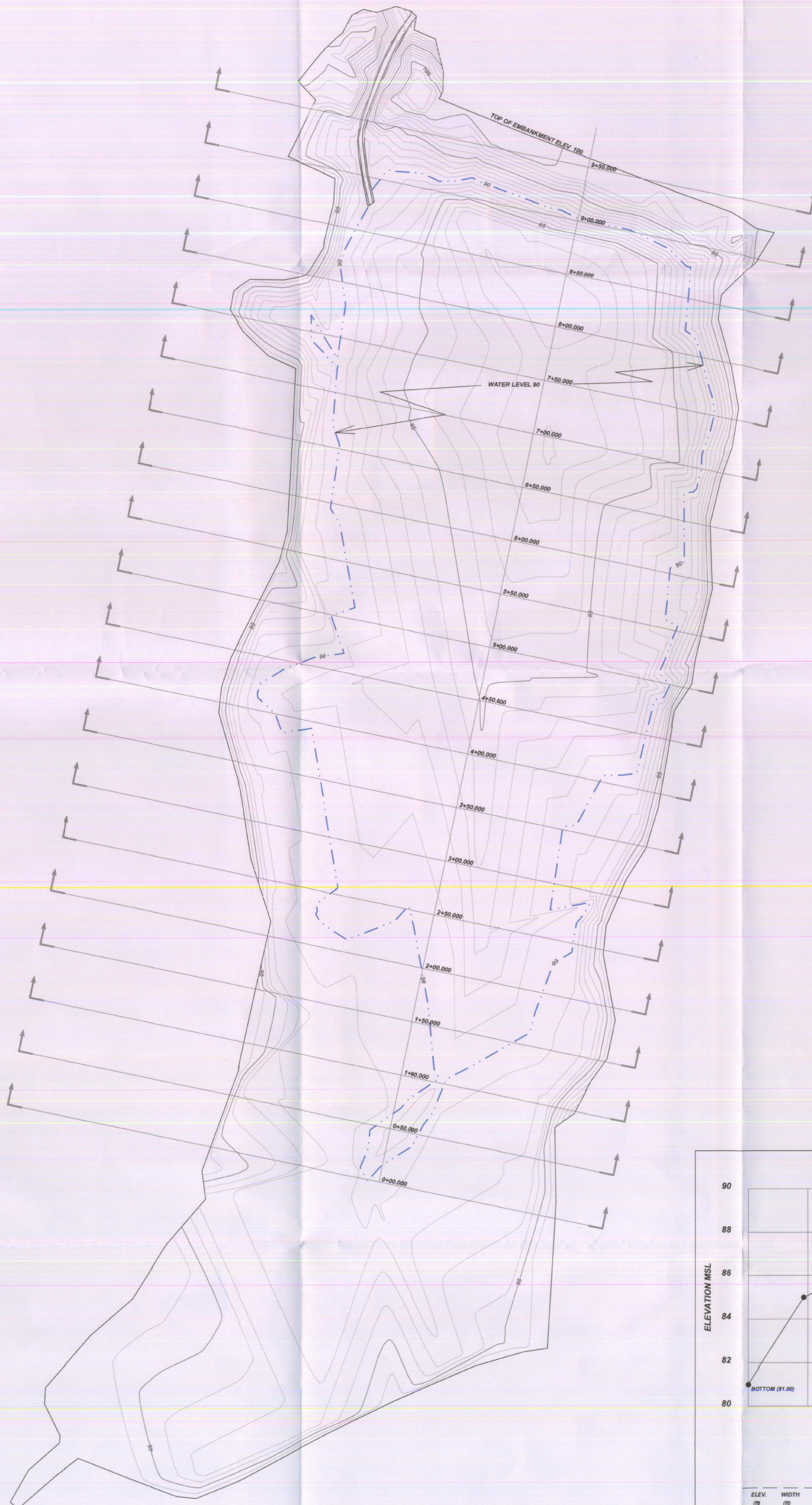
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CENTURY MINE  
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GRID SCALE= H:20, V:20



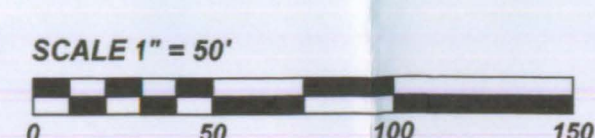
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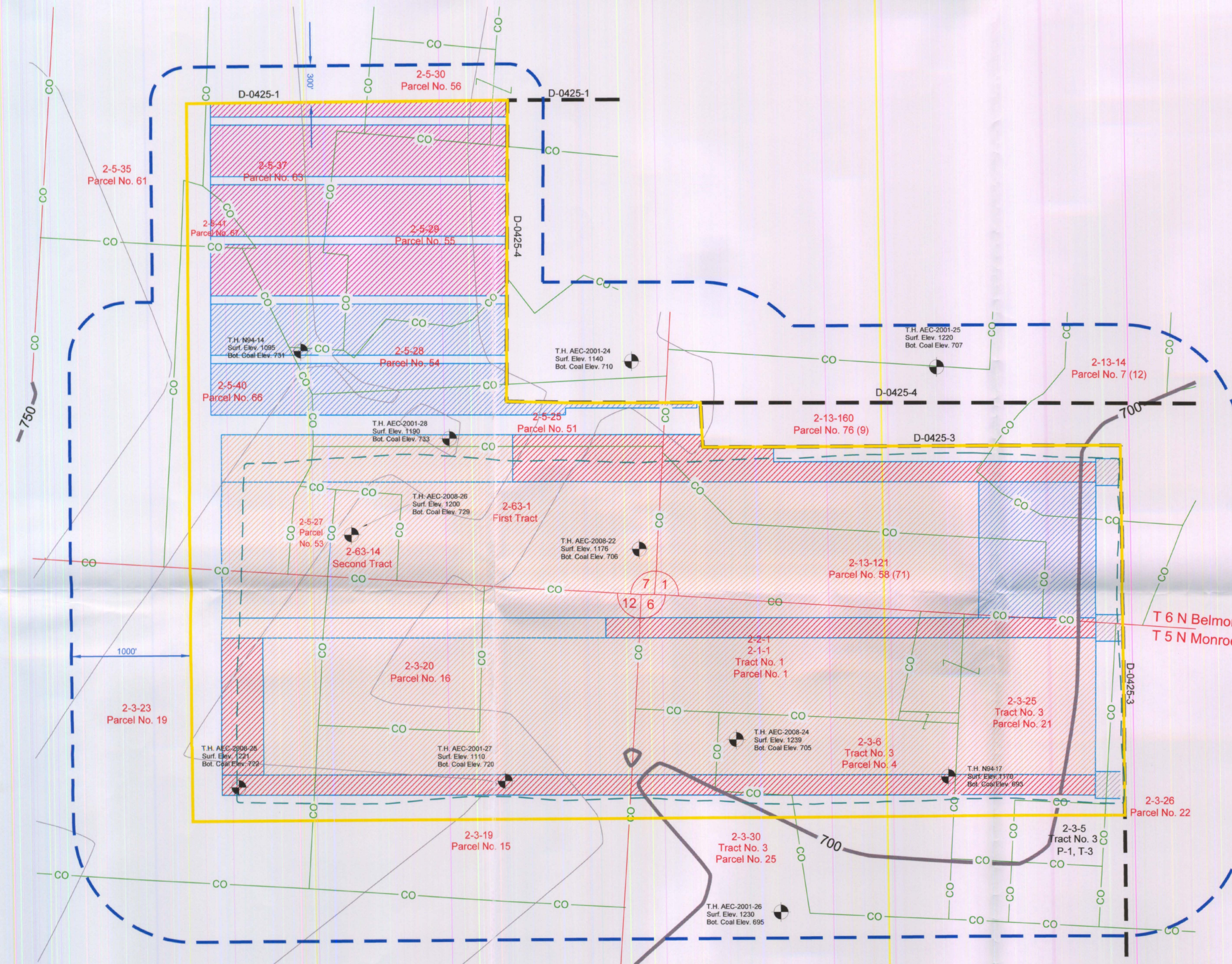
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DIVISION OF MINERAL RESOURCES  
PERMITTING OPERATOR



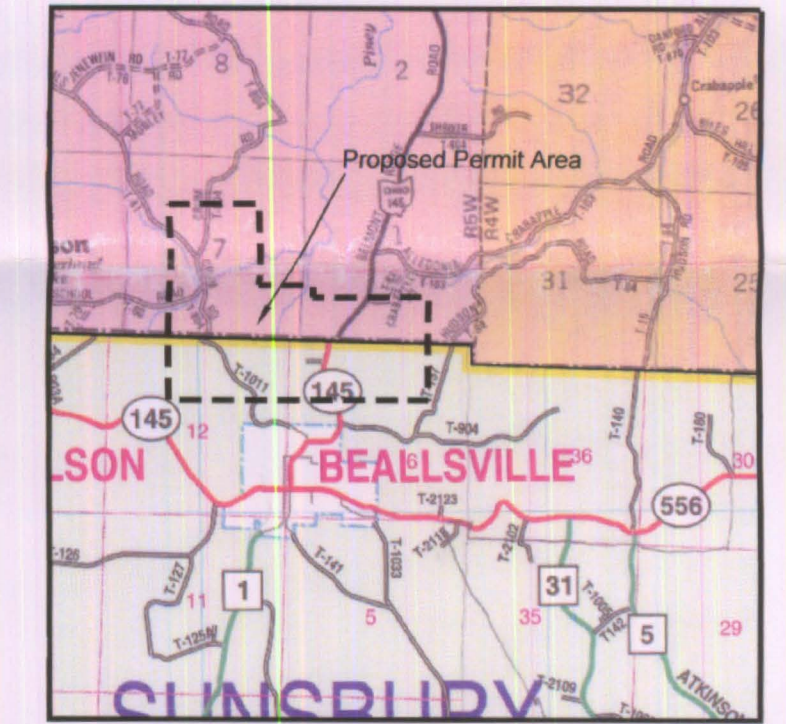
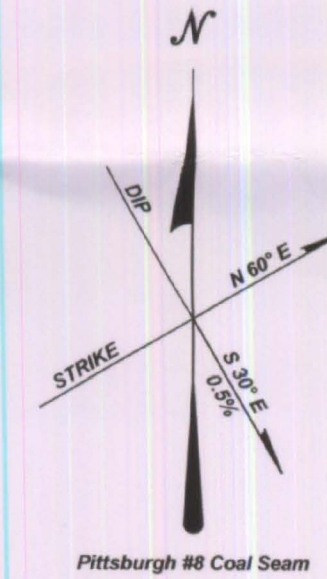
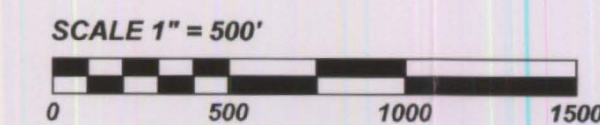
Engineer's Signature	AMERICAN ENERGY CORP. CENTURY MINE
	AS BUILT REED POND NO. 1
SCALE 1" : 50'	



Z:\Users\AmericanEnergy\Corporation\18\Bellefonte\Permitting\Map\Structure Contour Coal Parcel Timing Map 04-18-2009.dwg



**Note:**  
Due to the complex nature of the area's geology and the intrinsic nature of underground mining itself, all areas included in this permit area have been designated as full coal recovery mining except for the areas designated as non-subsidence on the map. This approach allows for the flexibility necessary for projection changes due to geologic anomalies, production demands, etc. All relevant information required by the applicable regulations is included as a part of permit application.

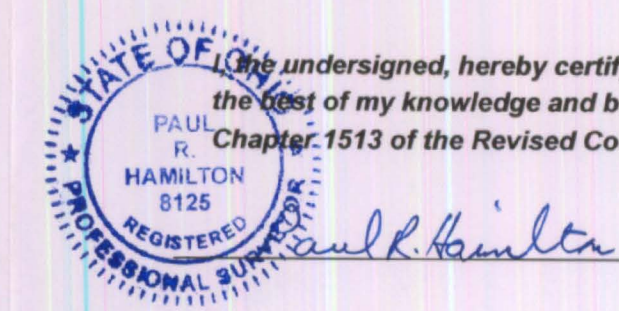


#### LEGEND

- Proposed Adjacent Area 741.2 Acres
- Permit D-0425 Adjacent Areas
- Coal Ownership Line (Consolidated Land Company)
- Hydrologic Boundary
- Testholes
- 650 Pittsburgh No. 8 Coal Seam Base Contours (50' Interval)
- Pittsburgh No. 8 Coal Seam Base Contours (10' Interval)
- Mining Plan Details: Gates, Mains, Barrier Pillars
- Angle of Draw (Zero Subsidence Line) (Full Coal Recovery)

#### TIMING LEGEND

- | Year   | Color  |
|--------|--------|
| Year 1 | Blue   |
| Year 2 | Red    |
| Year 3 | Green  |
| Year 4 | Yellow |
| Year 5 | Purple |



ACKNOWLEDGED BEFORE ME A NOTARY PUBLIC THIS 23<sup>rd</sup> DAY OF FEBRUARY 2010

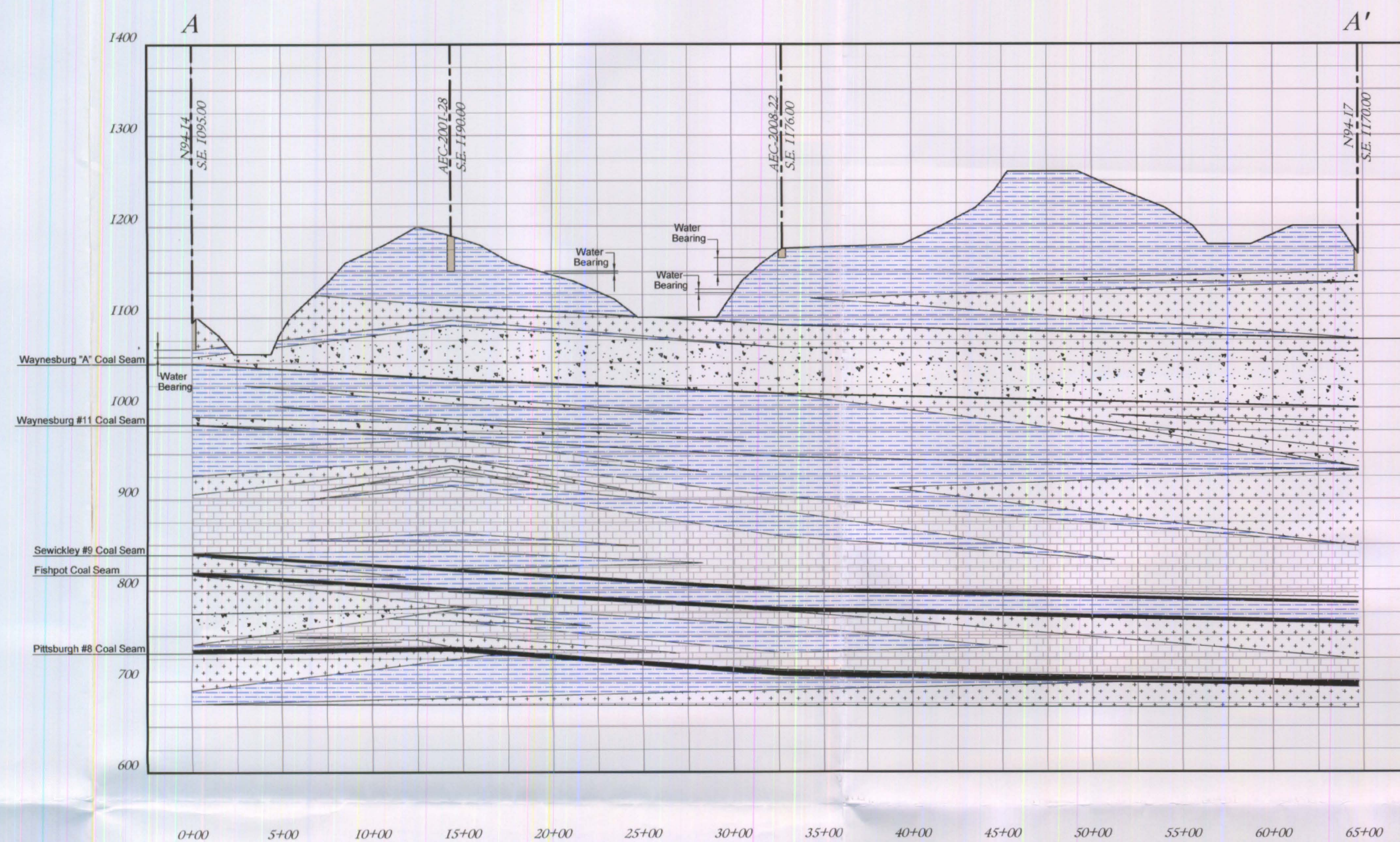
Joan M. Snyder  
Notary Public, State of Ohio  
My Commission Expires 3-21-12

NOTARY PUBLIC

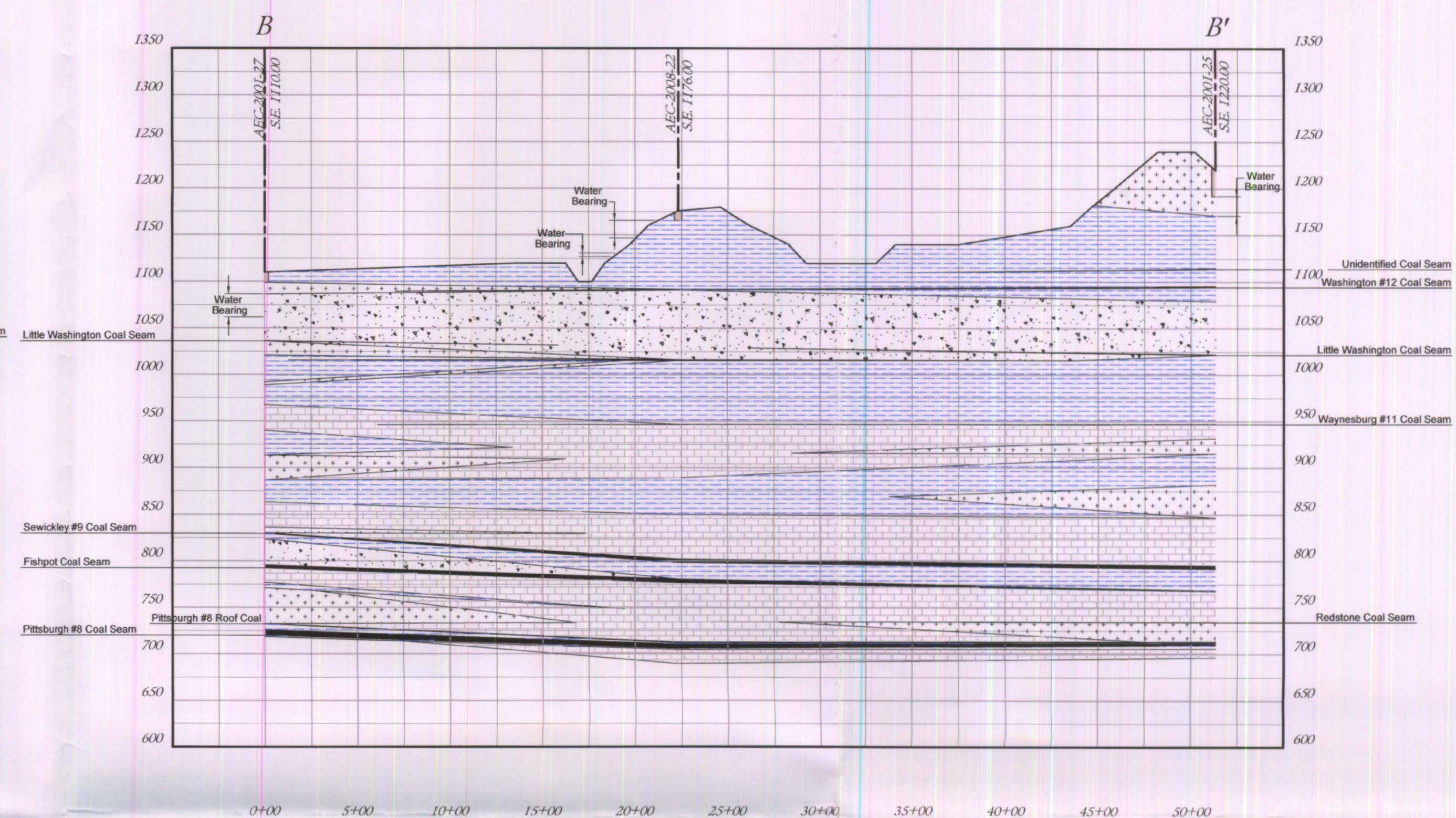
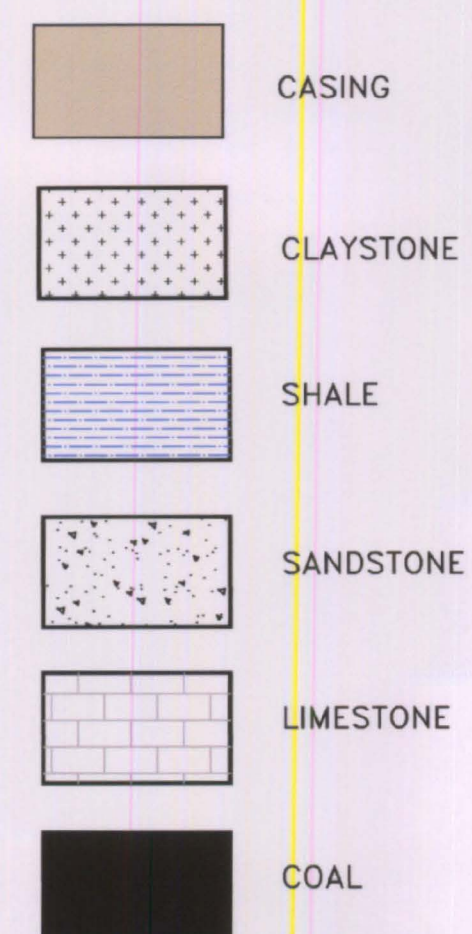
#### Addendum to Part 4, B(1)

AMERICAN ENERGY CORPORATION	
Timing, Structure Contour, Coal Parcel Map	
SECTIONS 1 and 7 WAYNE TOWNSHIP, T-6-N R-5-W, BELMONT COUNTY, OHIO.	
SECTIONS 6 and 12 SUNSBURY TOWNSHIP, T-5-N R-5-W, MONROE COUNTY, OHIO.	
SCALE: 1" = 500'	COAL CONTOUR INTERVAL = 10'
DATE PREPARED: JULY 11, 2008	REVISED: 04-13-09, 05-06-09, 02-05-10
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Geological Cross Section A - A'  
Horizontal Scale 1" = 500'  
Vertical Scale 1" = 100'



Geological Cross Section B - B'  
Horizontal Scale 1" = 500'  
Vertical Scale 1" = 100'

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CAMBRIDGE

GEOLOGIC CROSS SECTIONS  
A - A' & B - B'

AMERICAN ENERGY CORP.

HORIZ. SCALE: 1" = 500' VERT. SCALE: 1" = 100'

DRAWN BY: DJB

COMM. 02001-68

DATE: November 14, 2008

REVISED: 11-06-09

SHEET 1 OF 1



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